Performance Results

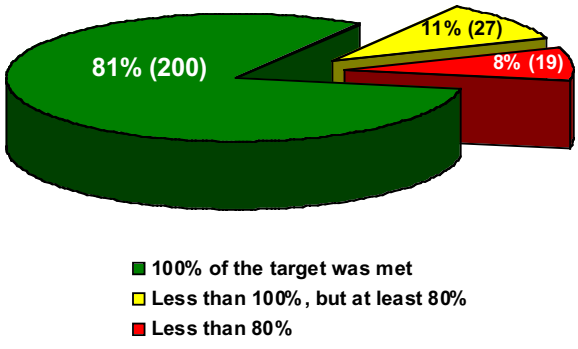
PERFORMANCE INTRODUCTION

The Performance Results section provides detailed information and an assessment of our progress for the Department's 59 program goals and 246 associated annual targets. Understanding the annual progress made toward outcome-oriented, multi-year program goals is a key indicator of whether the Department is, in turn, making progress toward its four strategic and seven general goals.

The following section is organized into seven sub-sections, each corresponding to one of the Department's seven general goals. Summary level information is provided at the start of each sub-section, and includes a tally of annual target performance, as well as current and prior year cost information. Detailed discussions of the program goals and associated annual targets that contribute to the general goal are presented with the following performance information:

- Descriptions and assessments of FY 2005 program goals and annual targets;
- Commentary for each program goal and annual target that explains the relevance of the performance results;
- Plans of action for resolving unmet annual targets;
- Supporting documentation that validates the performance results; and
- FY 2002 - FY 2004 performance results for program goals and annual targets (where applicable)[1] .

The Department's FY 2005 annual target performance is depicted in the following chart, using the color coded-scheme described in the Program Performance section of the Management's Discussion and Analysis.



[1] Related prior year target performance data represents a summary of performance against similar/related target(s) from each year. As specific targets may vary annually, performance should not be interpreted as a trend of the current year target.

DETAILED PERFORMANCE

General Goal 1: Nuclear Weapons Stewardship

General Goal 1: Nuclear Weapons Stewardship

Ensure that our nuclear weapons continue to serve their essential deterrence role by maintaining and enhancing safety, security, and reliability of the U.S. nuclear weapons stockpile.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
51	10	5	0

FY 2005 Program Costs ($ in Millions): $6,779

FY 05	FY 04	FY 03	FY 02
Y	Y	Y	G

Program Goal: Directed Stockpile Work Ensure that the nuclear warheads and bombs in the U.S. nuclear stockpile are safe, secure, and reliable. (NA GG 1.27)

Commentary: During FY 2005, although technical problems adversely affected two targets, the program fully met five others and met most major internal milestones. This is significant because the program continued to lead the effort to retain safe, secure, and reliable nuclear warheads and bombs to support the National Security Policy and the DOE Defense Strategic Goal.

FY 2005 Annual Targets

G **Complete 100 percent of annually required Assessments and Reports to support stockpile certification and surety reporting to the President. (NA GG 1.27.01)**

Commentary: This achievement is important because it certifies to the President that the nuclear weapons stockpile is safe, secure, and reliable.

Documentation: End-of-Year Reconciliation Report (OUO) (February 2005); Weapon Reliability Reports (SRD) (May 2005); Quarterly Inventory Report (July 2005) (SFRD); Nuclear Weapons Stockpile Memorandum (September 2005) (SRD); and STRATCOM briefing notes (July 2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Directed Stockpile Work (con't)

R **Complete 95 percent of items supporting Enduring Stockpile Maintenance (annual percentage of prior-year non-completed items completed). (NA GG 1.27.02)**

Commentary: The program did not meet the target as only 44 percent of current year Stockpile maintenance (surveillance) and 85 percent of prior year non-completed maintenance (surveillance) was completed. The primary causes are funding, capacity constraints, and periodic work stoppages at the Pantex Plant as a large number of deliverables were carried over into FY 2005 from FY 2004, so that, although percentage targets weren't fully met, the actual number of deliverables exceeded the original estimate. This maintenance is important because it keeps the active nuclear weapons fully operational if needed by the President.

Plan of Action: NNSA is conducting a strategic review of the surveillance program to determine a revised set of requirements given the recent reductions in the nuclear weapons stockpile announced by the President. The results of this study will determine the path forward on surveillance and establish a set of long-term requirements. In the meantime, NNSA continues to conduct surveillance activities.

Documentation: Milestone Reporting Tool (MRT) reports; quarterly Surveillance Policy and Integrated Requirements Council meetings, periodic site reviews; weapon-specific surveillance reviews; Production & Planning Directive; and surveillance cycle reports.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Y **Complete 30 percent of progress (cumulative) in completing NWC-approved B61-7/11 Life Extension Program (LEP) activity. (NA GG 1.27.03)**

Commentary: The program partially met the cumulative target of 30 percent as only 27 percent of the approved B61-7/11 activity was completed. Production capabilities failed to meet Design Agency specifications, requiring modifications to the baseline configuration. This achievement is important because it will help extend the lifetime of the B61-7/11 nuclear bomb.

Plan of Action: Air Force requirements change allowed for relaxed performance criteria, eliminating two planned tests, and allowing for a dual CSA design. The program schedule for FY 2006 has been adjusted and the integrated master schedule will be rebaselined accordingly. Process prove-in activities will begin in October 2005, engineering evaluations to be completed in December 2005, and qualified engineering release is on target for March 2006, all in support of a June 2006 First Production Unit. The Production Agency is currently considering the feasibility of the proposed changes.

Documentation: Master schedule input and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Directed Stockpile Work (con't)

G **Complete 29 percent progress (cumulative) for Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activities. (NA GG 1.27.04)**

Commentary: The program completed 29 percent progress (cumulative) for Weapons Council (NWC)-approved W76-1 Life Extension Program (LEP) activities. This achievement is important because it will help extend the lifetime of the W76-1 nuclear warhead.

Documentation: Milestone Reporting Tool (MRT) reports; W76-0 2005 PCD reflects actual first disassembly; and FSED Baseline schedule with completion statuses.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

G **Complete 30 percent of progress (cumulative) for NWC-approved W80-3 Life Extension Program (LEP) activities. (NA GG 1.27.05)**

Commentary: The program completed 30 percent of progress (cumulative) for NWC-approved W80-3 Life Extension Program (LEP) activities. This achievement is important because it will help extend the lifetime of the W80-3 nuclear warhead.

Documentation: Milestone Reporting Tool (MRT) reports; PDRAAG Report from DOD/AF/NWCA; successfully conducted flight test on Sep 14, 05; and NA-10 Phase 6.4 Authorization Letter of April 15, 2005.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

G **Assure that 100 percent of warheads in the Stockpile are safe, secure, reliable, and available to the President for deployment. (NA GG 1.27.08)**

Commentary: The program assured that 100 percent of warheads in the Stockpile are safe, secure, reliable, and available to the President for deployment. This achievement is important because it certifies to the President that nuclear weapons in the stockpile are available for use if needed.

Documentation: Milestone Reporting Tool (MRT) reports; End-of-Year Reconciliation Report (OUO) (February 2005); Weapon Reliability Report (SRD) (May 2005); and Quarterly Inventory Report (July 2005) (SFRD).

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Establish a validated baseline for projected W80 warhead production costs per warhead as computed and reported annually by the W80 Life Extension Program (LEP) Cost Control Board. (NA GG 1.27.09)**

Commentary: The program established a validated baseline for projected W80 warhead production costs per warhead as computed and reported annually by the W80 Life Extension Program (LEP) Cost Control Board. This achievement is important because it will lead to cost-saving measures in the nuclear weapons complex.

Documentation: W80 LEP Cost Control Board approved baseline

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	Y	NA

Program Goal: Science Campaign Develop improved capabilities to assess the safety, reliability, and performance of the nuclear package portion of weapons without further underground testing; enhance readiness to conduct underground nuclear testing as directed by the President; and develop essential scientific capabilities and infrastructure. (NA GG 1.28)

Commentary: During FY 2005, the Science Campaign fully met all five targets and most internal milestones. This is significant because the program has generally recovered from the effects of the Los Alamos safety- and security-related stand-down and is functioning as a key element of the science-based nuclear weapons stockpile.

FY 2005 Annual Targets

G **Complete 25 percent of progress (cumulative) along the Primary Predictive Capability Roadmap for development and implementation of the new Quantification of Margins and Uncertainties (QMU) certification and assessment methodology. (NA GG 1.28.01)**

Commentary: The program fully met the cumulative annual target of 25 percent (increase of 15 percent), in spite of the LANL stand-down. A primary certification and boost physics workshop was held; the joint primary certification plan was prepared by LANL and LLNL with guidance and input from science campaigns personnel. This achievement is important in that the development of primary certification tools continues without underground testing.

Documentation: Primary certification milestones completed as reported in individual reports and summarized in the NA-10 Milestone Reporting Tool (MRT).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 25 percent of progress (cumulative) towards conducting the first 2-axis hydrodynamics test/hydro shot on the Dual-Axis Radiographic Hydrotest Facility (DARHT) to support assessment of nuclear performance required by the National Hydrodynamics Plan. (NA GG 1.28.02)**

Commentary: LANL conducted high current, long pulse length testing of the injector and un-refurbished cells, demonstrating the performance of the injector and beam transport systems. This achievement is important because it delivers a new capability previously unavailable in the United States and critical to primary certification in the absence of underground testing is back on track to be completed.

Documentation: DARHT CD-0 report.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Science Campaign (con't)

G **Achieve 24 month readiness to conduct an underground nuclear test as established by National Security policy. (NA GG 1.28.03)**

Commentary: The program achieved 24-month test readiness to conduct an underground nuclear test. This achievement is important in that the United States maintains a credible capability to test nuclear weapons, if required.

Documentation: Milestones reported in the MRT meeting the requirements of the program to achieve 24-month test readiness as detailed in the Implementation Plan.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **NA**

G **Complete 75 percent of annual hydrodynamic tests completed in accordance with the National Hydrodynamics Plan, to support the assessment of nuclear performance. (NA GG 1.28.04)**

Commentary: The program fully met its annual target of 75 percent as LANL effectively recovered from the stand-down. Among the more significant efforts during FY 2005 were hydro shot 6125, executed with great results in the third quarter, and hydro shot 3612, executed in the fourth quarter. This achievement is important because these hydrodynamic tests are critical to W88 and W76 LEP certification.

Documentation: Shot reports for Hydrotests 6125 and 3612

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

G **Achieve 95 percent of baseline for obtaining plutonium experimental data on the Joint Actinide Shock Physics Experimental Research (JASPER) facility. (NA GG 1.28.05)**

Commentary: Reduced cost and increased productivity for a significant experimental tool was achieved.

Documentation: Memorandum from LLNL.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	NA	NA

Program Goal: Engineering Campaign Provide validated models and simulation tools to improve surety technologies, radiation hardened capabilities; microsystems and microtechnologies production; component and material lifetime assessments; and predictive aging models and surveillance diagnostics. (NA GG 1.29)

Commentary: During FY 2005, the Engineering Campaign exceeded one target and fully met the other four targets. The significance of this is that the program continues to provide validated engineering sciences tools, including surveillance and surety improvements, for use by customers in the Nuclear weapons complex, critical in the absence of underground weapon testing.

FY 2005 Annual Targets

G **Complete 50 percent (cumulative) of the Microsystems and Engineering Sciences Applications (MESA) facility project, while maintaining a Cost Performance Index of 0.9-1.15. (NA GG 1.29.01)**

Commentary: By August 30, 2005, the project reported 65 percent completion against the cumulative annual target of 50 percent (increase of 8 percent over actual FY 2004). Cumulative Cost Performance Index has been maintained within targeted limits. This achievement is important because construction of this facility is critical to improving the use of microsystems and microtechnologies in nuclear weapons.

Documentation: Monthly project reports and DOE Project & Reporting System (PARS)

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 60 percent progress (cumulative) towards developing all improved surety improvements for the Life Extension Programs (LEPs) having Phase 6.3 beginning in FY 2010 or later. (NA GG 1.29.02)**

Commentary: The program fully met its target of cumulative 60 percent of progress in surety features as all FY 2005 milestones for the Enhanced Surety Subprogram were met that directly supported attaining this performance metric. This achievement is important because new direct initiation technology was developed and a preliminary design review was conducted. In addition, new integrated security features that are less sensitive to evolving unauthorized use threats were demonstrated in a simulated environment.

Documentation: NA-10 Milestone Reporting Tool (MRT) reports and quarterly Defense Surety Committee presentations and documents.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Engineering Campaign (con't)

G **Deliver 24 percent (cumulative) of lifetime assessment, predictive aging models, and surveillance diagnostics. (NA GG 1.29.03)**

Commentary: The program delivered stockpile aging information for Annual Assessment Reports, provided an update on pit lifetime, demonstrated a pilot surveillance program for safety components, deployed new modeling and experimental capabilities for aging investigation, and completed component aging assessments to support the certification of the B61 Life Extension Program.

Documentation: NA-10 MRT reports and quarterly Enhanced Surveillance program review documents.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 55 percent (cumulative) of data sets used in developing tools and technologies to validate structural and thermal models and improve the capability for weapon assessment and qualification. (NA GG 1.29.04)**

Commentary: The program fully met its cumulative target of 55 percent of completed data sets as seven data sets were completed. This achievement is important because it provided critical input to assist in validating computational models to provide predictive capabilities.

Documentation: NA-10 MRT reports, annual program review documents, and various reports including Sandia Webfile Share 298932.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 24 percent of progress (cumulative) towards development of the technologies and qualification tools needed to meet nuclear survivability requirements for non-nuclear components in the Life Extension Programs (LEPs). (NA GG 1.29.05)**

Commentary: The program fully met the cumulative annual target of 24 percent of nuclear survivability tools by providing a modern shock and structural response model used to support W76-1 Life Extension Program and supporting analysis of 2-dimensional threat outputs for DoD and DOE customers. This achievement is important because it assures that nuclear weapons operate properly in high radiation fields similar to detonation.

Documentation: NA-10 MRT reports

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	Y	NA	NA

Program Goal: Inertial Confinement Fusion Ignition And High Yield Campaign
Develop laboratory capabilities to create and measure extreme conditions of temperature, pressure, and radiation approaching those in a nuclear explosion and conduct weapons-related research in these environments. (NA GG 1.30)

Commentary: The Inertial Confinement Fusion Campaign underwent a review by the JASONS group and conducted a significant rebaselining in FY 2005 in response to a report to Congress. The significance is that the program still fully or partially met all targets, and remains on schedule for its priority effort - the first attempt to simulate ignition (simulated nuclear explosion fusion conditions) at the National Ignition Facility in FY 2010.

FY 2005 Annual Targets

G **Complete 68 percent of progress (cumulative) toward creating and measuring extreme conditions for the FY 2010 stockpile stewardship requirement. (NA GG 1.30.01)**

Commentary: The program completed 68 percent of progress (cumulative) toward creating and measuring extreme conditions for the FY 2010 stockpile stewardship requirement. This achievement is important because the properties of a specific weapons material was completed which could not be finished in FY 2004 because of a security and safety stand down. The program remains on track to complete this measure by FY 2010.

Documentation: NA-10 Milestone Reporting Tool (MRT) reports.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Inertial Confinement Fusion Ignition And High Yield Campaign (con't)

Y **Complete 67 percent of progress (cumulative) towards demonstrating ignition (simulating fusion conditions in a nuclear explosion) at the National Ignition Facility (NIF). (NA GG 1.30.02)**

Commentary: The program attained a cumulative 65 percent vs. target of 67 percent as four of seven supporting milestones planned for FY 2005 were completed. This achievement is important because the program remains on track to demonstrate first ignition (simulating fusion conditions in a nuclear explosion) at the NIF in 2010.

Plan of Action: Track the three delayed milestones to completion in FY 2006: (1) Resolve target positioning and fuel ice-layer quality issues and complete experiments by the second quarter of FY 2006; (2) Achieve safe operation of complex system to cool and handle deuterium-tritium fuel and complete experiments by the fourth quarter, FY 2006; and (3) Develop new window to observe shock behavior in implosions and demonstrate performance by the second quarter of FY 2006.

Documentation: NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

G **Complete 81 percent (cumulative) of construction on the 192-laser beam National Ignition Facility (NIF). (NA GG 1.30.03)**

Commentary: The program fully met the target of 81 percent (increase of 5 percent) as substantial progress was achieved despite the impacts of funding reductions that resulted in layoffs of 300 staff and complete re-planning of the effort remaining to complete the project. This achievement is important because the project remains on target to complete NIF in time to support first ignition attempt in FY 2010.

Documentation: Earned value records for NIF Project and NDP maintained by NA-162 and NIF Project.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Complete 26 percent (cumulative) of equipment fabrication to support ignition experiments at National Ignition Facility (NIF). (NA GG 1.30.04)**

Commentary: The program attained a cumulative 21 percent vs. cumulative target of 26 percent as two of 3 supporting milestones were completed. With submission of the revised (June 2005) NIF Activation and Early Use Plan, the uncompleted milestone has been deleted since previously envisioned programmatic experimental operations are now precluded prior to NIF Project completion. The program remains on track to obtain necessary equipment to support NIF first ignition attempt in FY 2010.

Plan of Action: The schedule has been re-baselined. The annual targets for FY 2006 and later will be changed based on the plan's new ignition-related milestones.

Documentation: NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

Program Goal: Inertial Confinement Fusion Ignition And High Yield Campaign (con't)

G **Provide 500 days to conduct stockpile stewardship experiments (totaled for all Inertial Confinement Fusion facilities). (NA GG 1.30.05)**

Commentary: The program exceeded the target by providing 700 days of availability for ICF facilities (versus target of 500). This achievement is important because the program continues to provide key facilities to other programs in support of the science-based nuclear stockpile.

Documentation: NA-10 MRT reports for Z facility and Email records received from managers of Trident (LANL), OMEGA (LLE), and Nike (NRL) facilities.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Achieve an average of 9 hours per experiment required by the operational crew to prepare the Z facility for an experiment. (NA GG 1.30.06)**

Commentary: The program averaged 10.8 hours per experiment (20 percent more than the target amount of 9 hours) on an annual basis for preparation by Z operational crew. This measure is important as the program continues to reach for efficiencies in making facilities more productive.

Plan of Action: Implementation of additional procedures for radiation safety, beginning in FY 2004, increased time for experimental preparation. Reevaluate this measure in light of new required radiation safety procedures. Increase the target to 11 hours for FY 2006. Decrease target to 9 hours beginning in FY 2009.

Documentation: Spreadsheet maintained by Z Accelerator Systems Operations Manager that lists operational crew hours for each experimental shot.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	Y	NA	G

Program Goal: Advanced Simulation and Computing (ASC) Campaign Provide leading edge, high-end simulation computer capabilities to meet weapons assessment and certification requirements, including weapon codes, weapon science, platforms, and computer facilities. (NA GG 1.31)

Commentary: During FY 2005, the Advanced Simulation and Computing (ASC) Campaign met most of its targets, although technical delays in fully accepting a 100 teraflops capable platform prevented the program from fully meeting two of its five targets. The significance of its accomplishments means that the program continued to provide high-end computer simulation capabilities to support the science-based nuclear weapons complex on the road to predictive capability.

FY 2005 Annual Targets

G **Develop the initial baseline Primary Code for measuring peer-reviewed progress in completing milestones in the development and implementation of improved models and methods into integrated weapon codes and deployment to their users. (NA GG 1.31.01)**

Commentary: The program developed the initial baseline Primary Code for measuring peer-reviewed progress in completing milestones in the development and implementation of improved models and methods into integrated weapon codes and deployment to their users. This achievement is important because it continued maturing of the modern codes provided to users to support stockpile certification.

Documentation: Internal program reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Analyze 38 percent (cumulative) of the 31 weapon system components (primary/secondary/ engineering system) using Advanced Simulation and Computing codes, as part of annual assessments and certifications. (NA GG 1.31.02)**

Commentary: The program analyzed 38 percent (cumulative) of the 31 weapon system components (primary/secondary/ engineering system) using Advanced Simulation and Computing codes, as part of annual assessments and certifications. This achievement is important because it furthers adoption of the modern codes for improved assessment and certification of the nuclear stockpile.

Documentation: Internal program reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Advanced Simulation and Computing Campaign (con't)

Y **Attain maximum individual platform capacity of 100 TeraOPS (with 50 TB memory & 1 PetaByte (PB) storage). (NA GG 1.31.03)**

Commentary: The program did not met the target as the Purple platform, a 100 teraflops platform sited at Lawrence Livermore National Laboratory (LLNL), is not yet operational. The final FY 2005 peak performance without the Purple platform was 94 teraflops. This activity represents the further expansion of computing capability to support users in accordance with the 10-year vision.

Plan of Action: The hardware is at LLNL; acceptance testing will be conducted during the first quarter of FY 2006 with no problems anticipated. Target (acceptance testing progress) will be monitored until complete.

Documentation: Internal program reports.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

Y **Attain total production platform capacity of 172 TeraOPS. (NA GG 1.31.04)**

Commentary: The program attained a cumulative 163 teraflops, partially meting the cumulative capacity of 172 teraflops of total capability. This activity represents further expansion of computing capability to support users' IAW 10-year vision.

Plan of Action: The additional hardware (Purple platform, a 100 teraflops platform) is at LLNL; acceptance testing will be conducted during the first quarter of FY 2006 with no problems anticipated. Target (acceptance testing progress) will be monitored until complete.

Documentation: DP Milestone Reporting Tool, Program Reports, and Quarterly Performance Report Briefs and Program Technical Review Briefs.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Attain average cost of $5.70M per teraflops for delivering, operating, and managing all Stockpile Stewardship Program (SSP) production systems. (NA GG 1.31.05)**

Commentary: Even with the delay of the Advanced Simulation and Computing Purple platform (see NA GG 1.31.3), the efficiency measure was met. Platform capability delivery and maintenance is becoming more efficient.

Documentation: Program analysis based on availability and cost data.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	NA	NA

Program Goal: Pit Manufacturing and Certification Campaign Restore the capability and some limited capacity to manufacture pits of all types required by the nuclear weapons stockpile and plan for a long-term pit manufacturing facility to support the enduring stockpile. (NA GG 1.32)

Commentary: During FY 2005, the Pit Campaign fully met or exceeded all five targets. This is significant because the program remains on schedule to efficiently restore the nation's pit production and certification capability for the nuclear weapons stockpile.

FY 2005 Annual Targets

G **Complete 20 percent (cumulative) of major milestone toward restoration of manufacturing capability for all pit types in the enduring stockpile. (NA GG 1.32.02)**

Commentary: One element involving testing of the tilt-pour furnace had to be delayed because of the LLNL Superblock stand-down and this has impacted plutonium process development work. However, sufficient additional progress was made in other areas to meet the 20 percent goal. Significant progress was made this year toward restoring the capability to manufacture all pit (nuclear weapon trigger) types by FY 2009.

Documentation: NA-10 Milestone Reporting Tool (MRT) reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 50 percent (cumulative) of major milestones completed toward FY 2007 W88 Pit Certification. (NA GG 1.32.03)**

Commentary: The program completed 50 percent (cumulative) of major milestones completed toward FY 2007 W88 Pit Certification. This achievement is important because LANL completed the FY 2005 Level 2 milestone for the revised Pit Manufacturing and Certification Project Implementation Plan, maintaining progress towards completing W88 Pit Certification in FY 2007.

Documentation: NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Complete 35 percent (cumulative) percentage of major milestones toward completion of the Modern Pit Facility (MPF), by Critical Decision (CD) Phase One. (NA GG 1.32.04)**

Commentary: The program maintained progress towards rebaselined CD-1 schedule, ultimately leading to an MPF to support the stockpile.

Documentation: Monthly project reports and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Pit Manufacturing and Certification Campaign (con't)

G **Complete 70 percent (cumulative) of major Nevada Test Site (NTS) milestones toward execution of Los Alamos National Laboratory (LANL) major subcritical experiment (SCE) activities in support of Major Assembly Release (MAR) for W88 warhead using LANL-manufactured W88 pits. (NA GG 1.32.05)**

Commentary: The program exceeded the cumulative target of 70 percent by achieving 80 percent. In FY 2005, LANL rebaselined the Pit Certification Plan and accelerated NTS work supporting this target. Exceeding the FY 2005 target facilitates accomplishment of 2 remaining major subcritical experiments planned for the first and second quarters of FY 2006 at the NTS, and supports issuing the MAR for the W88 warhead with a LANL-manufactured pit (nuclear weapon trigger) in FY 2007.

Documentation: Monthly earned value reports from Bechtel project manager.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Complete 30 percent (cumulative) of major milestones toward establishing a limited capability of 10 W88 pits/year at Los Alamos National Laboratory (LANL). (NA GG 1.32.06)**

Commentary: The program fully met the cumulative target of 30 percent of the effort to support 10 pits per year capacity by the end of FY 2007. This achievement establishes interim limited capability to manufacture pits (nuclear weapon trigger) in support of stockpile requirements.

Documentation: NA-10 MRT (PMCIPP milestones) reports.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	NA	NA

Program Goal: Readiness Campaign Develop or reestablish new manufacturing processes and technologies for qualifying weapon components for reuse. (NA GG 1.33)

Commentary: During FY 2005, the Readiness Campaign fully met all four targets. This is significant because the program continues to provide weapons stockpile customers with new or improved replacement manufacturing processes and technologies, and, in the case of Tritium, the replacement of a critical capability missing for many years.

FY 2005 Annual Targets

G **Complete 32 percent (cumulative) of the major technology development milestones through advanced design and production technology (ADAPT), including model-based manufacturing, enterprise integration, and process development, resulting in enabling technologies for Directed Stockpile Work and Readiness in Technical Base and Facilities. (NA GG 1.33.01)**

Commentary: The completion of 8 of the 8 major deliverable milestones supporting this target resulted in development of new and replacement technologies needed to support the enduring stockpile and the life extension programs and to improve the flexibility and efficiency of the Complex.

Documentation: Site reporting to subprogram manager and NA-10 Milestone Reporting Tool (MRT) reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Complete 22 percent (cumulative) of the major manufacturing process efficiencies by high explosives and weapon operations, stockpile readiness, and nonnuclear readiness to support stockpile production and Life Extension Program (LEP) requirements. (NA GG 1.33.02)**

Commentary: A baseline change shifted some work between FY 2005 and FY 2006, but the initial target was attained. This achievement represents the planned deployment of new and replacement capabilities necessary to support the enduring stockpile and the life extension programs.

Documentation: Site reporting to subprogram manager and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

G **Irradiate 240 (cumulative) Tritium-Producing Burnable Absorber Rods in Watts Bar reactor. (NA GG 1.33.03)**

Commentary: The program fully met the cumulative target of 240 irradiated rods, and work has begun toward irradiating the next 240 rods. This achievement is important because it is the first time the Nation has produced new tritium (a critical ingredient to maintain the nuclear stockpile) in over a decade; a critical restoration of capability.

Documentation: Site reporting to subprogram manager and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Readiness Campaign (con't)

G **Complete 87 percent (cumulative) of Tritium Extraction Facility (TEF) project, while maintaining a Cost Performance Index of 0.9-1.15. (NA GG 1.33.05)**

Commentary: The facility is in its start-up phase and on schedule to meet its CD-4 date. This achievement is important because it provides the capability to extract new tritium (a critical ingredient to maintain the nuclear stockpile) from the production rods is on track to meet its FY 2007 completion date.

Documentation: Construction project reporting and NA-10 MRT reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	NA	NA

Program Goal: Readiness in Technical Base and Facilities – Operations and Maintenance Operate and maintain NNSA program facilities in a safe, secure, efficient, reliable and compliant condition including facility operating costs (e.g. utilities, equipment, facility personnel, training, and salaries); facility and equipment maintenance costs (staff, tools, and replacement parts); and environmental, safety, and health costs. (NA GG 1.34)

Commentary: During FY 2005, the Readiness in Technical Base and Facilities (RTBF) O&M Program exceeded all three targets. This is significant because the program continues to operate and maintain facilities in a superior and efficient manner so as to provide the required infrastructure for the nuclear weapons complex in a high state of availability to support Stockpile Stewardship goals, while improving maintenance contributions.

FY 2005 Annual Targets

G **Assure that mission-essential facilities are available on 90 percent of scheduled days. (NA GG 1.34.01)**

Commentary: NNSA RTBF facilities were available 98.8 percent of scheduled days. Facility availability supports program needs; no programmatic milestones were missed in FY 2005 due to facility availability.

Documentation: Reports-based Spreadsheet - facility availability for RTBF sites and detailed site reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Limit the Number of Reportable Accidents per 200,000 hours of work to less than 6.4. (NA GG 1.34.02)**

Commentary: Based on FY 2005 site safety data, NNSA operations and construction activities achieved a reportable accidents rate of 1.9 per 200,000 work hours. This average is well below Bureau of Labor standards, as well as DOE's FY 2000-2004 average of 2.1 accidents per 200,000 work hours.

Documentation: Reports-based Spreadsheet - site safety for RTBF sites and detailed site reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Program Goal: Readiness in Technical Base and Facilities – Operations and Maintenance (con't)

G **Achieve an annual NNSA complex-wide aggregate Facility Condition Index (FCI) of less than 9 percent, as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure. (NA GG 1.34.03)**

Commentary: NNSA exceeded the FY 2005 annual target of a NNSA complex-wide FCI of 9 percent for all mission-essential facilities and infrastructure. The end-of-year NNSA complex-wide aggregate FCI for mission-essential facilities and infrastructure as reported by sites in their Final FY 2006 Ten-Year Comprehensive Site Plans is 7.4 percent. This accomplishment is significant because it demonstrates NNSA's continued progress towards achieving industry standards for the condition of its facilities and infrastructure.

Documentation: Reports-based Spreadsheet - FCI for RTBF sites and site-specific FY2006 Ten-Year Comprehensive Site Plans, Attachment F-2.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
R	Y	G	G

Program Goal: Readiness in Technical Base and Facilities – Construction Plan, prioritize, and construct state-of-the-art facilities, infrastructure, and scientific tools (that are not directly attributable to DSW or a campaign) within approved baseline cost and schedule. (NA GG 1.35)

Commentary: The RTBF Construction Program's lower target ratings are a result of the small number of facilities included in the targets, local costs beyond the program's control, and short construction delays that caused rescheduling into early FY 2006. The significance of the effort is that RTBF Construction continues to provide timely state-of-the-art facility construction support to the nuclear weapons complex.

FY 2005 Annual Targets

R **Initiate designs, attain Critical Decision (CD) Phase One, or cancel for cause, 3 projects. (NA GG 1.35.01)**

Commentary: The program completed CD-1 for 2 of 3 scheduled construction projects. CD-1 was delayed for the Pantex Component Evaluation Facility (CEF) while project is being evaluated for different funding profile. Two of the three projects directly contribute to the strategic goal of replacing obsolete facilities. The third project, CEF, will be executed to avoid programmatic impacts - its unanticipated delay is attributed to a lack of funding that caused the schedule to stretch.

Plan of Action: CD-3 for the Building 12-064 Production Cells Upgrade has been rescheduled for the first quarter of FY 2006. The project will be monitored until CD-3 is attained.

Documentation: Monthly project reports and DOE PARS.

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

Program Goal: Readiness in Technical Base and Facilities – Construction (con't)

R **Initiate construction (CD-3) on, or cancel for cause, 4 projects. (NA GG 1.35.02)**

Commentary: The program completed CD-3 for 3 of 4 scheduled construction projects. CD-3 was issued for LANL Chemistry and Metallurgy Research Building Replacement (CMRR) Light Lab & Office Bldg and LANL Nat'l Security Sciences Bldg; while CD-3 for the Pantex Bldg Building 12-064 Production Cells Upgrade was delayed because of the adverse local procurement climate. Significance of Accomplishment: Two projects met CD-3 as scheduled. A third, CMRR, will meet CD-3 in the first days of FY 2006. The fourth, Pantex 12-64, affected by unexpected rising local construction costs, will revise its execution strategy to avoid any impacts to programs.

Plan of Action: CD-3 for the Building 12-064 Production Cells Upgrade has been rescheduled for the first quarter of FY 2006. The project will be monitored until CD-3 is attained.

Documentation: Monthly project reports and DOE PARS.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

R **Completed or attained CD-4 within approved scope, cost, and schedule baselines, for 9 projects. (NA GG 1.35.03)**

Commentary: The program completed CD-4 for 5 construction projects. CD-4 was obtained for the Stockpile Management Restructuring Initiative (SMRI) Project, at Y-12; while CD-4 was delayed for the SNL Test Capabilities Revitalization (TCR), SNL Weapons Evaluation Test Laboratory (WETL), and Y-12 Purification Facility. Five projects successfully attained CD-4. Two others, TCR and Y-12 Purification Facility, will attain CD-4 in FY06/1Q, the former being completed six weeks late due to a site-wide electrical safety shutdown. One other, WETL, has completed construction but awaits clearing up minor sensor issues that cannot be resolved until the third quarter of FY 2006.

Plan of Action: Actual FY05 Appropriation and FY06 and out-year OMB Passback caused a January 2005 revision in construction schedule. The revised FY05 Target for CD-4 is actually 8. Of these, CD-4 for the TCR will slip to the first quarter of FY 2006 and SNL WETL to the third quarter of FY 2006. The Y-12 Purification Facility will slip to FY 2006. Projects will be monitored until CD-4 is attained.

Documentation: Monthly project reports and DOE PARS.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	Y	NA	NA

Program Goal: Secure Transportation Asset Safely and securely transport nuclear weapons, weapons components, and special nuclear materials to meet projected Department of Energy (DOE), Department of Defense (DoD), and other customer requirements. (NA GG 1.36)

Commentary: The STA Program fully met three of its five targets; increased mission and security requirements limited completion of two other agent-related targets. The significance of this is that the program continues to provide critical safe and secure transportation to DOE, DoD, and other customers for nuclear material while it right-sizes equipment and Federal Agents and improves shipment efficiencies, to better meet customer requirements.

FY 2005 Annual Targets

G **Complete 105 secure convoys completed. (NA GG 1.36.01)**

Commentary: The program exceeded the annual target and completed 106 convoys vs. target of 105 (increase of 15 from FY 2004) during FY 2005. The program is on track to increase mission capacity to 135 convoys per year, by 2008, thus increasing customer support.

Documentation: Shipment reports and data from TRIPS, a program convoy-tracking database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Achieve 33 Safeguard Transporters (SGTs) in operation. (NA GG 1.36.03)**

Commentary: For FY 2005, the program fully achieved the cumulative annual target of 33 (increase of 2 for the year). This achievement is important because it provides transportation trailers that have much greater safety and security features to prevent against accidents or threats.

Documentation: Quality Assurance Inspection program documents from Kansas City Site Office.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

Y **Maintain 335 Federal Agents at the end of the year. (NA GG 1.36.04)**

Commentary: Federal Agent end-strength was 318 vs. target of 335. The cause was the high number of agent losses and one-time number of transfers to non-agent positions. The net Federal Agent strength increased by 40 in FY 2005 and the program remains on track to staff-up to the level of 420 agents by FY 2008 to meet expanding transportation demand and Design Basis Threat requirements.

Plan of Action: Continue recruitment efforts and achieve at least 30 candidates per training class for the next three years.

Documentation: Program Federal Personnel database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Program Goal: Secure Transportation Asset (con't)

G **Ship 87 percent of requested packages of nuclear weapons, components, and material. (NA GG 1.36.05)**

Commentary: The program the program exceeded the annual target and completed 98 percent of requested packages vs. the target of 87 percent (increase of 2 percent). The effort benefited from the addition of an agent unit (#4) and focus on other high-package shipments because of deferred Pantex workload. The program increased mission capacity to better meet customer requirements.

Documentation: Data from Travel Reporting and Information Processing System (TRIPS), program transportation shipping requests, and STA Advisory Board meeting minutes.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Y **Limit annual average scheduled overtime hours to 900 overtime hours per agent. (NA GG 1.36.06)**

Commentary: The average annual agent overtime was 937 hours vs. a target of 900. Principal causes were fewer agents than forecasted, workload/numbers of convoys, and long segments of some convoys. The program has reduced average overtime per agent from an FY 2002 baseline of 1,300 hours. Less overtime enhances agent alertness and increases safety.

Plan of Action: Planned workload and security requirements forecast increased agent overtime. The program will manage overtime at the 1,000 hours per agent level for the immediate future.

Documentation: Internal program overtime database.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	Y	NA	NA

Program Goal: Nuclear Weapons Incident Response Respond to and mitigate nuclear and radiological incidents worldwide. (NA GG 1.37)

Commentary: FY 2005 cost and schedule targets were met. This achievement is significant because it indicates the program is capable of responding to and mitigating nuclear and radiological incidents worldwide.

FY 2005 Annual Targets

G **Ensure 3 (cumulative) of the 8 designated Radiological Assistance Program (RAP) Regions have implemented a maritime radiation search program. (NA GG 1.37.01)**

Commentary: FY 2005 target was exceeded as all eight RAP Regions have maritime radiation search qualified teams (well above the target of three). The planned deployment of maritime search equipment to the appropriate RAP regions is complete. The program has validated these capabilities are in place through joint training exercises with local US Coast Guard units in the Regions. This achievement is significant because it is aimed at improving the nation's capability to detect the illicit introduction of nuclear and radiological weapons/material into the United States via various waterways.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Ensure 60 percent (cumulative) of identified Radiological Assistance Program (RAP) team members (80 eligible out of 216) qualified to provide technical assistance in managing and executing the response to a radiological or nuclear event. (NA GG 1.37.02)**

Commentary: FY 2005 target was fully met as 60 percent of the RAP team members have been qualified through the Albuquerque RAP Training Emergency Response training course and Nevada Test Site annual exercise. These team members are now able to provide technical assistance in managing, and executing a Consequence Management response to any radiological or nuclear event. This achievement is significant because it allows RAP teams to manage the response to the aftermath of a radiological or nuclear event without having to wait for another team to arrive on the scene.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Nuclear Weapons Incident Response (con't)

Y **Conduct 9 "no-notice" emergency management exercises. (NA GG 1.37.03)**

Commentary: FY 2005 target not met. Eight no-notice exercises were completed (nine were planned). This achievement is significant because it validates under real conditions that the human and equipment elements of the US response team are prepared to effectively address an event should it occur.

Plan of Action: After consideration of the increased number of real-world events affecting DOE/NNSA and the improved conduct of annual site/facility emergency exercises, the program director has determined that emergency management readiness can be satisfactorily verified with the conduct of 8 no-notice exercises. The reduction to 8 no-notice exercises will save costs and allow more effective planning and scheduling of no-notice exercises.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Maintain an annual Triage capability of 300 calls per year, which could be resolved to provide remote isotopic identification of an unknown item and determine if a threat exists. (NA GG 1.37.04)**

Commentary: During FY 2005, Triage received 20 actual calls, conducted 77 drills, 22 Courtesy checks (customer validating their procedures and processes to interface with Triage), and 33 communications checks, for a total of 152 callouts. All were resolved successfully. The callouts this year involved multiple Spectra files, some of them "batched" together in one callout instead of multiple calls to simulate higher volumes in order to validate a call rate that extrapolates to 300-plus calls per year. This achievement is significant as it provides a new and growing capability to remotely determine the identity of an unknown source and to validate if a credible threat exists. This alone, saves on false deployments of the response teams.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Achieve 30 percent (cumulative) of emergency response equipment replaced, upgraded, or re-certified. (NA GG 1.37.05)**

Commentary: FY 2005 target was exceeded as 100 percent of all essential equipment has undergone annual or more frequent maintenance. Emergency response equipment to be replaced, upgraded, or re-certified have been entered into a central database and are being tracked for compliance to maintenance schedules. This achievement is significant because it ensures that all response equipment is ready for use.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Program Goal: Nuclear Weapons Incident Response (con't)

G **Ensure that the Emergency Communications Network is operationally ready to exchange classified and unclassified data, video, and voice information between headquarters and 32 remote locations 95 percent of the time. (NA GG 1.37.06)**

Commentary: The FY 2005 target of 95 percent was exceeded as communication network readiness was 99.88 percent. The program tests the Emergency Communications Network on a weekly basis. This achievement is significant because the test program assures the Department that it has a reliable emergency communications network and trained operators to manage it.

Documentation: Emergency Response Database System (ERDS).

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Facilities and Infrastructure Recapitalization Program (FIRP)
Restore, rebuild and revitalize the physical infrastructure of the nuclear weapons complex. (NA GG 1.38)

Commentary: All FIRP FY 2005 annual targets were exceeded based on approved Work Authorizations, monthly project reports and Site's Final FY 2006 Ten-Year Comprehensive Site Plans. This accomplishment demonstrates that FIRP is making significant progress to restore, rebuild, and revitalize the physical infrastructure of the nuclear weapons complex sites, resulting in improved facilities conditions and increased operational efficiency and effectiveness.

FY 2005 Annual Targets

G **Issue authorizations to start work to achieve a reduction in NNSA's deferred maintenance of $154.75 million, and stabilize deferred maintenance by the end of FY 2005. (NA GG 1.38.01)**

Commentary: FIRP exceeded the FY 2005 annual target to fund $154.75M of the FY 2003 deferred maintenance baseline for elimination. This accomplishment demonstrates that FIRP is making significant progress to restore, rebuild, and revitalize the physical infrastructure of the nuclear weapons complex sites, resulting in improved facilities conditions and increased operational efficiency and effectiveness. Based on approved FY 2005 Work Authorizations, over 130 projects were issued funds to execute work that will reduce NNSA's deferred maintenance by $178.2M. NNSA deferred maintenance has been stabilized.

Documentation: FY 2005 FIRP Work Authorizations

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Facilities and Infrastructure Recapitalization Program (con't)

G **Issue authorizations to start work to achieve a 350,000 gsf reduction to the NNSA footprint. (NA GG 1.38.02)**

Commentary: FIRP exceeded the FY 2005 annual target to fund 350,000 gsf for elimination. Based on approved FY 2005 Work Authorizations, over 20 disposition projects were issued funds to execute work that will reduce NNSA's footprint by over 514,000 gsf. This accomplishment is significant because it reduces long-term costs and risks and results in a smaller NNSA weapons complex footprint.

Documentation: FY 2005 FIRP Work Authorizations

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Achieve an annual NNSA complex-wide aggregate Facility Condition Index (FCI) of 9 percent, as measured by deferred maintenance per replacement plant value, for all mission-essential facilities and infrastructure. (NA GG 1.38.04)**

Commentary: NNSA exceeded the FY 2005 annual target of a NNSA complex-wide FCI of 9 percent for all mission-essential facilities and infrastructure at the eight weapons complex sites. End of year NNSA complex-wide aggregate FCI for mission-essential facilities and infrastructure as reported by sites in their Final FY 2006 Ten-Year Comprehensive Site Plans is 7.4 percent. This accomplishment is significant because it demonstrates NNSA's continued progress towards achieving industry standards for the condition of its facilities and infrastructure.

Documentation: NNSA Sites' Ten-Year Comprehensive Site Plans

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	Y	Y	G

Program Goal: Safeguards and Security Protect NNSA personnel, facilities, nuclear weapons, and information from a full spectrum of threats, most notably from terrorism, which has become of paramount concern post September 11, 2001. (NA GG 1.39)

Commentary: While cost performance was on target, FY 2005 performance fell just short of their annual targets. However, significant progress was made in improving physical security, implementing new DBT requirements and reducing the amount of classified removable electronic media. This achievement is significant because it protects NNSA personnel, facilities, nuclear weapons, and information from a full spectrum of threats.

FY 2005 Annual Targets

G **Ensure that 65 percent (cumulative) of Physical Security reviews conducted by the Office of Independent Oversight and Performance Assurance (OA) at NNSA sites result in the rating of "effective" (based on last OA review at each site over 6 physical security topical areas). (NA GG 1.39.02)**

Commentary: FY 2005 target was exceeded as OA rated 72 percent of NNSA's Physical Security topical areas as "effective" (target was 65 percent). During FY 2005, OA conducted reviews at Nevada Site Office, Sandia National Laboratories/Sandia Site Office, and Y-12. This achievement is important because it helps to ensure that proper security is maintained at NNSA sites.

Documentation: Latest OA inspection report for each NNSA site

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

R **Ensure that 80 percent (cumulative) of Cyber Security reviews conducted by the Office of Independent Oversight Performance Assurance (OA) at NNSA sites result in the rating of "effective" (based on last OA review at each site over 2 Cyber Security topical areas). (NA GG 1.39.03)**

Commentary: FY 2005 target was not met as OA rated only 57 percent of NNSA's Cyber Security topical areas as "effective" (target was 80 percent). During FY 2005, OA conducted only 2 reviews of NNSA Cyber Security areas (the classified programs at Sandia and Y-12) and they have suspended any further reviews until January 2006. This achievement is important because it helps to ensure the proper security is maintained at NNSA sites.

Plan of Action: Work with NNSA sites to implement corrective action plans to fix deficiencies, work with OA to schedule follow-on inspections in a timely manner to independently evaluate corrective actions, and rebaseline out-year targets to realistically reflect the time needed to increase this performance to at least 90 percent.

Documentation: Latest OA inspection report for each NNSA site

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Safeguards and Security (con't)

G **Ensure that 90 percent of Office of Independent Oversight and Performance Assurance (OA), Inspector General, and General Accountability Office findings have an approved corrective action plans in place within 60 days from receipt of final report. (NA GG 1.39.04)**

Commentary: FY 2005 target was exceeded as corrective action plans are in place within 60 days from receipt of final report for 100 percent of OA findings (target was 90 percent). Corrective Action Plans were identified for Sandia and Y-12. OA review at Nevada requiring Corrective Action Plans are not due until the first quarter of FY 2006 since the report was issued in September 2005. This achievement is important because it helps to ensure the proper security is maintained at NNSA sites.

Documentation: NNSA Site Corrective Action Plans

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Complete the processing needed to grant Q Security Clearance for federal and contractor employees in the NNSA complex, other than headquarters (does not include days for OPM or FBI background checks), in 85 annual average calendar days per applicant. (NA GG 1.39.06)**

Commentary: FY 2005 target was not met as it took an average of 100 days to complete the NNSA processing needed to grant Q Security Clearances (target was 85 days not including days for Office of Personnel Management (OPM) or the Federal Bureau of Investigation to conduct background checks). Since establishing this target the OPM has doubled its per month return rate on investigations which has led to a backlog in NNSA processing clearances. This achievement is important because it helps to expedite the hiring process for NNSA employees requiring security clearances.

Plan of Action: The NNSA Service Center has instituted a series of focused efforts in staffing, training, and processing. The Service Center has attained full staffing and is working to have them fully trained by December 2005. A Quality Assurance program was created to focus on procedures, which are being incorporated in the Standard Operating Procedures, and to re-evaluate the current target for processing clearances. During the last two months of FY 2005 corrective actions positively impacted the average processing times, which decreased to 76 days in August and 79 days in September. Evidence of these results is documented in the monthly Service Center Clearance Status Reports.

Documentation: Monthly Service Center Clearance Status Reports.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Program Goal: Safeguards and Security (con't)

G **Complete 12.5 percent (cumulative) progress, measured in milestones completed, towards implementation of the May 2003 Design Basis Threat (DBT) policy at NNSA sites. (NA GG 1.39.07)**

Commentary: FY 2005 target was exceeded as a cumulative 78 percent of the milestones towards implementation of the May 2003 Design Basis Threat (DBT) policy at NNSA sites have been completed (target was 12.5 percent). All sites have completed several milestones, and expect to be in compliance with the May 2003 DBT by the end of FY 2006 as scheduled. This achievement is important because it helps to strengthen the security at NNSA sites against a post-9/11 threat environment.

Documentation: May 2003 DBT Implementation Plans and progress reports from each NNSA site.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Destroy 10 percent (cumulative) of pieces of accountable classified removable electronic media (CREM) at Los Alamos National Laboratory (LANL). (NA GG 1.39.08)**

Commentary: FY 2005 target was exceeded as cumulative 21.69 percent of the pieces of accountable classified removable electronic media (CREM) at Los Alamos National Laboratories (LANL) were destroyed (target was 10 percent). This achievement is important because it helps to strengthen security by destroying no longer needed classified data.

Documentation: LANL CREM reports

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	NA	NA

Program Goal: Office of the Administrator (Shared Between General Goal One and Two) Create a well-managed, inclusive, responsive, and accountable organization through the strategic management of human capital; enhanced cost-effective utilization of information technology; and greater integration of budget and performance data. (NA GG 1/2.50)

Commentary: Cost and schedule performance met or exceeded planned baselines. This achievement is significant because it provided the human, logistical, and IT resources needed to achieve the Department's Defense Strategic Goal.

FY 2005 Annual Targets

G **Fill 96 percent of approved Managed Staffing Plan positions. (NA GG 1/2.50.01)**

Commentary: FY 2005 target was exceeded as 98 percent of all approved Managed Staffing Plan positions were filled by year-end (versus a target of 96 percent). This achievement is important because timely and adequate staffing of positions helps the Department achieve its Defense Strategic Goal.

Documentation: NNSA Staffing Summary prepared by NNSA HR

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Achieve an average NNSA Program score of 75 percent (cumulative) on the OMB Program Assessment Rating Tool (PART). (NA GG 1/2.50.03)**

Commentary: FY 2005 target of 75 percent was exceeded as the cumulative PART score for all 15 NNSA programs reviewed to date is 83.7 percent (however, 6 of these scores are final draft scores for the FY 2007 budget and still could change slightly). This accomplishment is significant because it indicates NNSA progress in fully achieving the President's Management Agenda goals for budget performance integration and achieving results.

Documentation: OMB Program Assessment Rating Tool (PART)

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Consolidate 50 percent of NNSA federal offices to the NNSA Information Technology (IT) Common Environment/Service Center. (NA GG 1/2.50.06)**

Commentary: FY 2005 target was fully met as 50 percent of the NNSA sites have been consolidated to the NNSA IT common environment. This achievement is important because operating in a common IT environment allows for an annual cost savings (gross) of $11M against an operating base of $34M.

Documentation: Project Management Lifecycle Document

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

General Goal 2: Nuclear Nonproliferation

General Goal 2: Nuclear Nonproliferation

Provide technical leadership to limit or prevent the spread of materials, technology, and expertise relating to weapons of mass destruction; advance the technologies to detect the proliferation of weapons of mass destruction worldwide; and eliminate or secure inventories of surplus materials and infrastructure usable for nuclear weapons.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
18	8	4	0

FY 2005 Program Costs ($ in Millions): $1,191

FY 05	FY 04	FY 03	FY 02
Y	Y	G	G

Program Goal: Nonproliferation and Verification Research and Development
Develop new technologies to improve U.S. capabilities to detect and monitor nuclear weapons production, proliferation, and testing worldwide. (NA GG 2.40)

Commentary: FY 2005 overall performance is green as cost and schedule targets were met and/or exceeded. New technologies were developed to improve U.S. capabilities to detect and monitor nuclear weapons production, proliferation, and testing worldwide.

FY 2005 Annual Targets

G **Develop and evaluate 8 advanced radiation and remote sensing technologies through customized tests that challenge and characterize their operating parameters. (NA GG 2.40.01)**

Commentary: FY 2005 target was exceeded as 10 technologies were developed and tested (target was 8), one of which was an unscheduled test of remote sensing equipment for detecting hazardous chemicals in support of Hurricane Katrina efforts. This achievement is important because it improves U.S. capability to detect the early stages of nuclear weapon programs.

Documentation: Direct communication and briefings from laboratory points of contact. Quarterly reports and project reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Y **Deliver 8 advanced technologies and operational systems (e.g. satellite payloads and seismic stations calibration data sets) to U.S. national security users, improving the accuracy and sensitivity of nuclear weapons test monitoring. (NA GG 2.40.02)**

Commentary: Only 7 of 8 planned technologies and operational systems were delivered (5 satellite and 2 seismic data sets). Due to an industry-wide recall of a class of space-qualified electronic hardware, one planned satellite payload was delayed until FY2006. This achievement is important because it improves the accuracy and sensitivity of monitoring for nuclear detonations.

Plan of Action: The delayed space payload delivery scheduled for FY 2005 will take place in the first quarter of FY 2006.

Program Goal: Nonproliferation and Verification Research and Development (con't)

Documentation: GBD #70 Consent-to-Ship memorandum, 5 Aug 2005 Letter from the Associate Deputy Administrator of the Office of Nonproliferation Research and Development to the Space Missile Center.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete 70 percent of research projects for which an independent R&D merit assessment has been completed during the second year of effort, and again within each subsequent three year period to assess scientific quality and mission relevance. (NA GG 2.40.03)**

Commentary: FY 2005 target was exceeded as 100 percent of the required reviews were completed (target was 705). During FY 2005, all 53 required projects were reviewed. This achievement provided for an assessment of the scientific quality and mission relevance of projects.

Documentation: Individual Independent Review summaries for each reviewed project.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

G **Present 200 professional papers/exchanges, each representing Science and Technology knowledge and U.S. leadership in program areas. (NA GG 2.40.04)**

Commentary: FY 2005 target was exceeded as 283 papers/exchanges were presented (target was 200). This achievement is important because it provides program credibility and recognized acceptance.

Documentation: Project quarterly reports that list publications for each project.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Highly Enriched Uranium (HEU) Transparency Implementation

Develop and implement transparency measures which increase confidence that Low Enriched Uranium (LEU) purchased under the 1993 U.S./Russian HEU Purchase Agreement is derived from HEU extracted from dismantled Russian nuclear weapons and eliminated from Russian stockpiles. (NA GG 2.41)

FY 05	FY 04	FY 03	FY 02
Y	G	NA	NA

Commentary: FY 2005 overall performance fully met planned cost and schedule baselines by completing the scheduled monitoring visits and monitoring analysis. This achievement is important because it provides verification that the blend down of HEU to LEU is performed, which, once completed, means that the material can no longer be used for weapons development.

Program Goal: Highly Enriched Uranium Transparency Implementation (con't)

FY 2005 Annual Targets

G **Achieve 95 percent of operation of three Blend-Down Monitoring Systems (BDMS) during the HEU blend-down process (UEIP, ECP, the Siberian Chemical Combine [SchE] in Seversk). (NA GG 2.41.01)**

Commentary: FY 2005 target was exceeded as the annual operation was 100 percent (versus a target of 95 percent). This achievement is important because it helps to monitor the conversion of Russian HEU to LEU.

Documentation: BDMS Data Analysis Report

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Y **Conduct 100 percent of 24 allowed Special Monitoring Visits (SMVs) to four Russian facilities HEU-to-LEU processing facilities to monitor conversion of 30 MT per year of HEU to LEU. (NA GG 2.41.02)**

Commentary: FY 2005 target was not met as only 92 percent of planned 100 percent of 24 SMVs were completed. Two SMVs have been rescheduled out of FY05 and into the first quarter of FY 2006 to perform maintenance activities on the Blend-Down Monitoring Systems during a scheduled plant outage at the Ural Electrochemical Integrated Plant. The impact was minimal as the U.S. was able to maintain oversight of all the HEU downblended during FY 2005. This achievement is important because it helps to monitor the conversion of Russian HEU to LEU.

Plan of Action: The two SMVs have been rescheduled to be completed in first quarter of FY 2006. For CY 2005, the total number of trips will be 24.

Documentation: Metric Report and Status Report

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Staff the on-site Transparency Monitoring Office (TMO) at the Ural Electrochemical Integrated Plant during 76 percent of plant's operating schedule. (NA GG 2.41.03)**

Commentary: FY 2005 target was exceeded as monitoring activities provided 80 percent coverage of plant operations (target was 76 percent). This achievement is important because it helps to monitor the conversion of Russian HEU to LEU.

Documentation: FY 2005 Transparency Monitoring Office (TMO) Staffing and Plant Operations Days.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	R	NA	NA

Program Goal: Elimination of Weapons Grade Plutonium Production Reactors
Reduce the threat of nuclear terrorism by facilitating shutdown of the three remaining weapons-grade plutonium production reactors in the Russian Federation through: (1) construction of a new fossil-fuel (coal) plant at Zheleznogorsk; and (2) refurbishment of an existing fossil-fuel (coal) power plant at Seversk. (NA GG 2.42)

Commentary: Although both Seversk and Zheleznogorsk are slightly behind schedule, all major critical path milestones have been met, and both projects are on schedule for their respective completion dates within budget. This achievement is important because progress on completing replacement energy capacity is directly tied to shutdown milestones of the three plutonium production reactors. The FY 2006 Seversk target will be updated to match the final CD-2 approved baseline.

FY 2005 Annual Targets

Y **Achieve 32 percent progress (cumulative) towards refurbishing a fossil plant in Seversk, facilitating shut down of two weapons-grade plutonium production reactors. (NA GG 2.42.01)**

Commentary: FY 2005 target was not met as the Seversk project achieved 25.7 percent completion versus a target of 32 precent. The Seversk project has completed $79.9M Budgeted Cost of Work Performed (BCWP), or 25.7 percent, of the total $311M BCWS (Budgeted Cost of Work Scheduled). Progress is slightly behind the 28 percent FY 2005 target needed to meet the December 2008 completion schedule. An adjustment occurred from the Critical Decision (CD)-1 approved target of 32 percent to the 28 percent upon the CD-2 approval decision from the Deputy Secretary (final cost and schedule baselines). However, the CD-2 approval was in November 2004, which was too late to change the FY05 target. This achievement is important because progress on completing Seversk replacement energy capacity is directly tied to shutdown milestones of two of the three plutonium production reactors.

Plan of Action: Update the FY06 Seversk target to match the final CD-2 approved baseline.

Documentation: The Seversk monthly progress report for September.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

G **Achieve 4.8 percent progress (cumulative) towards constructing a fossil plant in Zheleznogorsk, facilitating shut down of one weapons-grade plutonium production reactor. (NA GG 2.42.02)**

Commentary: FY 2005 target was exceeded as the project achieved 4.9 percent completion versus a target of 4.8 percent. The Zheleznogorsk project has completed $28.2M BCWP (4.9 percent) based on a pre-baseline total project cost (TPC) of $570.5 M. However, the FY 2005 target of 4.8 percent is insufficient to achieve the December 2010 completion. The Zheleznogorsk FY 2006 target will be adjusted appropriately. This achievement is important because progress on completing the Zheleznogorsk replacement energy capacity is directly tied to shutdown milestones of one of the three plutonium production reactors.

Documentation: The Zheleznogorsk monthly progress report for September.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Elimination of Weapons Grade Plutonium Production Reactors (con't)

G **Achieve 1.0 against the Seversk Cost Performance Index (cumulative actual costs per budgeted cost of work performed at Seversk). (NA GG 2.42.05)**

Commentary: FY 2005 target was exceeded as the Seversk project achieved a favorable cost performance rating of 0.99 (Actual Cost of Work Performed is $79.3M versus the Budgeted Cost of Work Performed of $79.9M). This plant would replace two Russian reactors that produce weapons-grade plutonium. This achievement is important because progress on completing replacement energy capacity is directly tied to shutdown milestones of the three plutonium production reactors.

Documentation: The Seversk monthly progress report for September.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	R	Y	G

Program Goal: Nonproliferation and International Security Strengthen the global nuclear nonproliferation regime by 1) limiting sensitive exports; 2) supporting international safeguards; and 3) providing policy recommendations and technical and policy advice to develop and implement U.S. policy (treaties, agreements, and mutual inspections). (NA GG 2.44)

Commentary: FY 2005 overall performance was excellent as both cost and schedule performance met or exceeded planned baselines. This achievement is significant because it helps to strengthen international nuclear nonproliferation controls by limiting sensitive exports, supporting international safeguards, and providing policy and technical support to U.S. nonproliferation policy formulation and implementation.

FY 2005 Annual Targets

G **Train 5,500 (cumulative) international and domestic experts in nuclear nonproliferation since 9/11/01 (e.g. International Atomic Energy Agency inspectors, export control officers, etc.). (NA GG 2.44.02)**

Commentary: FY 2005 target exceeded as the cumulative number of international and domestic nuclear experts trained was 5,798. This achievement is important because it trains and educates nuclear nonproliferation experts through the attendance of training classes, workshops, seminars, and/or technical interchange meetings.

Documentation: Attendance sign in sheets, training records and participant lists all collected and documented by monthly lab reports, periodic trip reports, and tracking systems such as the International Nonproliferation Export Control Program's AAR system.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Nonproliferation and International Security (con't)

G **Achieve an annual average cost per review of nuclear, chemical and biological export license applications of $450. (NA GG 2.44.3)**

Commentary: FY 2005 target of $450 per export license review was exceeded as the 6,000 reviews were performed at an average cost of $400 per review. This achievement is important because it controls sensitive technology and helps reduce the threat of WMD proliferation.

Documentation: PINS database of total license reviews (technical and end-user at the DOE National Laboratories i.e. ANL, LANL, LLNL, ORNL, PNNL, SNL, SRNL and one production site, KCP) performed divided by total funds expended for the reviews.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	G	G	G

Program Goal: Global Initiatives for Proliferation Prevention (GIPP) Prevent adverse migration of weapons of mass destruction expertise by engaging weapons experts in peaceful efforts and by helping to downsize the Russian nuclear weapons complex. (NA GG 2.45)

Commentary: Cost Performance and Schedule Performance for the fiscal year were both fully within tolerances. This achievement is important for several reasons: (1) engaged weapon scientists and technicians in peaceful technology development employment; (2) prevented the migrations of scientist to work for rouge countries; and (3) provided jobs to stabilize the nuclear cities of the Former Soviet Union and generated an economic base for commercial businesses.

FY 2005 Annual Targets

Y **Engage 8,200 former Soviet weapons scientists, engineers, and technicians. (NA GG 2.45.01)**

Commentary: FY 2005 target was not met as only 7,775 of the planned 8,200 former Soviet weapons experts were engaged in non-defense activities. During the reporting period, important new project work was put on hold because of a fundamental disagreement with the Russian Federation over legal liability provisions contained in a necessary government-level international agreement authorizing work at sensitive Russian nuclear sites. This achievement is important because it keeps Russian WMD experts employed in peaceful pursuits thus reducing the threat of WMD proliferation.

Plan of Action: A proposed new agreement text has been submitted to the State Department to obtain negotiating authority under the provisions of OMB Circular 175. The new agreement is designed to permit expanded work at closed nuclear cities in Russia, thereby increasing the number of former Soviet weapon scientists who can be engaged in civilian GIPP activities through GIPP projects. Alternate mechanisms are also under consideration.

Documentation: IPP Lab Reports; IPP database; NCI database.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: G

Program Goal: Global Initiatives for Proliferation Prevention (con't)

G **Achieve 42 (cumulative) technologies commercialized or businesses created/expanded. (NA GG 2.45.02)**

Commentary: The program commercialized 26 technologies, and created or expanded 16 businesses for a total of 42 technologies commercialized or businesses created/expanded. This achievement is important because it provides peaceful employment opportunities for Russian WMD experts thus reducing the threat of WMD proliferation.

Documentation: USIC Company Survey; NCI Lab Survey; NCI MIS database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Obtain 65 percent of non-U.S. Government project funding contributions. (NA GG 2.45.04)**

Commentary: In FY 2005, fully met target of obtaining 65 percent in non-U.S. Government project funding contributions. These contributions take the form of matching resources from U.S. industry partners and co-funding from Russian government and non-government sources. This achievement is significant because funding from other countries and the private sector augment USG resources thus creating conditions for self-sustaining employment opportunities.

Documentation: USIC Company survey; CRADAs; NCI Lab Survey; NCI MIS database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	Y	Y	G

Program Goal: International Nuclear Materials Protection and Cooperation Prevent nuclear terrorism by working in Russia and other regions of concern to (1) secure and eliminate vulnerable nuclear weapons and weapons-usable material and (2) install detection equipment at border crossings and Megaports to prevent and detect the illicit transfer of nuclear material. (NA GG 2.46)

Commentary: While the program met targets for securing Russian Navy and Strategic Rocket Forces warhead sites, schedules slipped for securing weapons-usable nuclear material, converting HEU to LEU, and completing installations at Second Line of Defense sites. These achievements are important because they helped reduce nuclear proliferation by (1) securing vulnerable nuclear weapons and weapons-usable material, including an additional 9 warhead sites which represent 3 percent of the estimated 600 MTs of weapons-usable material, (2) down blending an additional 1.5 MTs of HEU to LEU, and (3) preventing and detecting the illicit transfer of nuclear material through the installation of radiation detection at an additional 21 sites (including 2 Megaports).

FY 2005 Annual Targets

G **Secure 37 (cumulative) Russian Navy warhead sites. (NA GG 2.46.01)**

Commentary: The program secured 37 (cumulative) Russian Navy warhead sites. This achievement is important because it secures nuclear weapon sites that were vulnerable to theft.

Documentation: Contract deliverable documents including photos, periodic site visits, and assurance reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Secure 10 (cumulative) Russian Strategic Rocket Forces and 12th Main Directorate sites. (NA GG 2.46.02)**

Commentary: The program secured 10 (cumulative) Russian Strategic Rocket Forces and 12th Main Directorate sites. This achievement is important because it secures nuclear weapon sites that were vulnerable to theft.

Documentation: Contract deliverable documents including photos, periodic site visits, and assurance reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: International Nuclear Materials Protection and Cooperation (con't)

R **Secure 37 percent of 600 MTs of weapons-usable nuclear material. (NA GG 2.46.03)**

Commentary: The FY 2005 target was not met as only 29 percent of the weapons usable nuclear material was secured (versus target of 37 percent) because of inadequate access to the Russian Serial Production Enterprises. This achievement is important because it secures weapons-usable nuclear materials that were vulnerable to theft.

Plan of Action: A joint U.S.-Russian team is working on approaches to provide the U.S. with acceptable access to the remaining Russian buildings that contain nuclear material. As part of the this approach, the program will also be transitioning to a slightly revised measure aimed at tracking the cumulative number of Russian nuclear material buildings secured. This new measure will more accurately capture the overall threat reduction impact, and it will be better for assessing the program's progress towards achieving its long-term goal.

Documentation: Completed task order deliverables, site visits, and assurance reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Convert 7.5 (cumulative) metric tons of Highly Enriched Uranium to Low Enriched Uranium. (NA GG 2.46.04)**

Commentary: FY 2005 target not met, as only a cumulative total of 7.1 MTs of HEU to LEU (versus target of 7.5) was converted because of insufficient amount of feed material made available for down blending at Dmitrovgrad.

Plan of Action: Work with Rosatom and Dmitrovgrad to increase the amount of feed material available for down blending. It is possible that not meeting the current down blending goals in FY 2005 could result in a modest impact to the projected material conversion end date. However, there are several other variables that will also impact that date, such as availability of material to down blend, changing capacity of down blending at sites, and funding availability. Indeed, it is possible that conversion rates may exceed the projected goals in the outyears to compensate for a near-term shortfall.

Documentation: Material Consolidation and Conversion project and Downblending Conversion Summary.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

Program Goal: International Nuclear Materials Protection and Cooperation (con't)

Y **Achieve 98 (cumulative) Second Line of Defense (SLD) sites with nuclear detection equipment installed, along with 5 (cumulative) Megaports completed. (NA GG 2.46.06)**

Commentary: FY 2005 target not met; the program completed a cumulative total of 87 sites (including 4 Megaports) versus the target of 98 sites (including 5 Megaports) because of a shortfall in core sites due to delays in agreement completion and a subcontracting delay at one Megaport. This achievement is important because it helps detect the clandestine smuggling of nuclear materials through ports and across borders.

Plan of Action: One Megaport not completed in FY 2005 will be completed in early first quarter FY 2006. For the core program, the schedule for completing several countries will be extended. Signed agreements with Slovenia and Ukraine. Work is beginning at sites in these countries. Signing with Turkey and Georgia is expected this year.

Documentation: All sites can be verified as completed via the documentation of an Acceptance Testing Report.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

G **Achieve $5.3M as the cumulative cost per metric ton to complete rapid security upgrades on Russian weapons-usable nuclear material. (NA GG 2.46.07)**

Commentary: Target was fully met by achieving a cumulative cost of $5.3M per metric ton to complete rapid upgrades on Russian weapons-usable nuclear material. This achievement is important because it secures weapons-usable nuclear materials in the most cost-effective manner possible.

Documentation: Completed task order deliverables, site visits, and assurance reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
R	Y	R	NA

Program Goal: Fissile Material Disposition Eliminate surplus Russian plutonium and surplus U.S. plutonium and Highly Enriched Uranium (HEU). (NA GG 2.47)

Commentary: The HEU disposition program fully met the FY 2005 target by downblending or shipping for downblending 82 MT toward the Department's total goal of 174 MT. However, the U.S. and Russian plutonium disposition programs were further delayed in the 4th quarter because of continued uncertainties relating to the Russian program. Completion of successful negotiations with Russia on the liability issue, receipt of Nuclear Regulatory Commission construction authorization for the U.S. MOX facility, and fabrication and irradiation of MOX fuel lead assemblies are contributing to the Department's goal of disposing of 34 MT of surplus weapons-grade plutonium in the United States and Russia. This achievement is important because it prevents nuclear proliferation by eliminating surplus stockpiles of Russian plutonium and U.S. plutonium and HEU.

FY 2005 Annual Targets

R **Complete 100 percent (cumulative) of the detailed design, and 25 percent (cumulative) of site preparation for the Pit Disassembly and Conversion Facility (PDCF). (NA GG 2.47.01)**

Commentary: FY 2005 target was not met as only 87 percent of the detailed design was completed (versus a target of 100 percent plus 25 percent site preparation) because of an underestimation by the contractor of the amount of remaining design work. This achievement is important because it prevents nuclear proliferation by eliminating the pits (triggers) of nuclear weapons.

Plan of Action: The program has initiated a comprehensive review of remaining design work and is re-baselining the cost and schedule of PDCF. Site preparation activities will begin in October 2005.

Documentation: Results reported in monthly Earned Value Management System reports prepared by design contractor.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Y **Complete 100 percent (cumulative) of the detailed design, and begin site preparation and procurement for the mixed oxide (MOX) Fuel Fabrication Facility. (NA GG 2.47.02)**

Commentary: FY 2005 target was not met as only 80 percent of the detailed design was completed (versus a target of 100 percent plus begin site preparation), because unanticipated complexities in adapting a French fuel fabrication facility design to meet U.S. requirements for handling weapons-grade plutonium. This resulted in an underestimation by the contractor of the design scope. This achievement is important because it prevents nuclear proliferation by eliminating surplus stockpiles of U.S. plutonium.

Plan of Action: The program has re-baselined the cost and schedule of the U.S. MOX project and will complete documentation for CD-2 validation by the second quarter of FY 2006. Site preparation activities will begin in the first quarter of FY2006.

Documentation: Results reported in monthly Earned Value Management System reports prepared by design contractor.

Related Prior Year Target Performance: FY 2004: Y FY 2003: NA FY 2002: NA

Program Goal: Fissile Material Disposition (con't)

G **Downblend, or ship for downblending, 82 MT (cumulative) of surplus U.S. HEU. (NA GG 2.47.03)**

Commentary: Downblended or shipped for downblending 82 MT (cumulative) of HEU. This achievement is important because it prevents nuclear proliferation by eliminating surplus stockpiles of U.S. HEU.

Documentation: Results reported in monthly receipt reports provided by BWX Technologies Nuclear Products Division, Nuclear Fuel Services, and SRS.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

R **Complete 100 percent (cumulative) of the detailed design, begin site preparation, construction and long-lead procurement for the Russian MOX Fuel Fabrication Facility. (NA GG 2.47.05)**

Commentary: FY 2005 target was not met as only 15 percent of the detailed design of the Russian MOX facility was completed (versus a target of 100 percent). An ongoing Russian Government technical review of its program delayed progress because of an inability to transfer French MOX technology to Russia and a lack of signature on the liability protocol. Site preparation activities for the Russian MOX facility have begun.

Plan of Action: After the liability protocol is signed and the Russian Government completes its technical review, the United States, France, and Russia will begin discussions on an agreement to transfer MOX technology to Russia.

Documentation: Results reported in monthly contractor progress reports.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
Y	NA	NA	NA

Program Goal: Global Threat Reduction Initiative (GTRI) Remove and/or secure high-risk nuclear and radiological materials and equipment around the world that pose a potential threat to the United States and the international community. (NA GG 2.64)

Commentary: Met year-end goals in three of five program elements. Two program elements did not meet year-end goals due to lack of foreign government agreement to return fresh fuel and delays in the planned spent fuel shipment from Uzbekistan. Working to engage foreign governments to accomplish the work in FY 2006. Significance of Accomplishment: (1) Reduced the threat posed by unsecured radioactive sources by recovering 1,660 domestic sealed sources and upgrading the security of 102 sites worldwide; and (2) Reduced the threat posed by vulnerable nuclear material that terrorists could use to make a nuclear weapon by returning 449 U.S.-origin research reactor spent fuel assemblies and 23 kilograms of Russian-origin fresh HEU.

FY 2005 Annual Targets

Y **Convert 44 (cumulative) targeted research/test reactors from HEU to LEU fuel. (NA GG 2.64.01)**

Commentary: FY 2005 target was not met as only 40 of 44 planned reactors have been converted to LEU. This is because (1) HFR Petten in the Netherlands was delayed due to regulatory approval; (2) the repatriation of the HEU fresh fuel for the VR-1 at the Czech Technical University was delayed until late September 2005 and the LEU fresh fuel will be delivered in October 2005; and (3) delivery of LEU fresh fuel from Russia to two Libyan reactors was delayed. This achievement is important because it prevents nuclear proliferation by converting research reactors from HEU to LEU fuel.

Plan of Action: Expecting two additional conversions in October 2005 for a total of 42 - HFR Petten in the Netherlands and the VR-1 at the Czech Technical University. The two Libyan reactors (IRT-4M and critical assembly) will convert after Russia delivers the LEU fresh fuel in December 2005. The critical assembly will convert by the end of December 2005, and the reactor will convert in summer 2006. Initiated work to complete conversions of several research reactors in FY 2006, including two U.S. university reactors that will be converted by summer 2006.

Documentation: Annual letter from ANL.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **NA** FY 2002: **NA**

Program Goal: Global Threat Reduction Initiative (GTRI) (con't)

R **Repatriate 175 kilograms (cumulative) of HEU fresh and/or spent fuel from Soviet-supplied research reactors to Russia. (NA GG 2.64.02)**

Commentary: FY 2005 target was not met as only 122 of 175 kilograms were repatriated because (1) repatriation of HEU fresh fuel from Libya did not occur as planned due to delay by Russia to deliver LEU fresh fuel; (2) agreement was not reached with Ukraine to repatriate HEU fresh fuel from Sevastopol site in Ukraine; and (3) Russian environmental review of the 'Unified Project' to accept the pilot shipment of HEU spent fuel from Uzbekistan has been a long process causing the shipment date to slip into FY 2006. Repatriation during FY 2005 was completed for 6 kg of fresh HEU from the Czech Republic in December 2004, 3 kg of fresh HEU from Latvia in May, and 14 kg of fresh HEU from Czech Technical University in September. This achievement is important because it prevents nuclear proliferation by removing Russian origin HEU fuel from vulnerable locations worldwide.

Plan of Action: Agreed with Russia on the schedule for future shipments as part of Bratislava Presidential Summit. Russia plans to complete the one-day operation to repatriate HEU fresh fuel from and deliver LEU fresh fuel to Libya in December 2005. The first of four shipments of HEU spent fuel from Uzbekistan will occur in November/December 2005, as approval of the 'Unified Project' is expected in October. Continuing to push for fresh fuel shipments from Belarus, Kazakhstan and Ukraine.

Documentation: Official NNSA Press Releases and other news reports.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Return 6,693 fuel assemblies (cumulative) containing U.S.-origin spent fuel from foreign research reactors. (NA GG 2.64.03)**

Commentary: FY 2005 target was exceeded as 6,783 fuel assemblies were returned (versus a target of 6,693). This achievement is significant for two reasons: (1) the return of U.S.-origin spent nuclear fuel from foreign research reactors reduces worldwide stocks of weapons-usable material, thus reducing the potential threat that terrorists could use this material in a nuclear weapon or improvised nuclear device; and (2) returning more fuel assemblies than was anticipated brings the program closer to meeting its objectives and is significant, especially since, in 2004, the original program deadline was extended for ten years to 2019.

Documentation: FRR SNF Scorecard (Lab report issued after receipt of shipments)

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Recover 11,500 (cumulative) U.S. excess sealed sources. (NA GG 2.64.04)**

Commentary: FY 2005 target was exceeded as a cumulative 11,682 sources were recovered (versus a target of 11,500). This achievement is significant in that the total cumulative number of sources recovered is enough material to make more than 1,200 dirty bombs.

Documentation: Bi-weekly recovery report.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Program Goal: Global Threat Reduction Initiative (GTRI) (con't)

G **Secure 174 high priority sites (cumulative) with vulnerable radiological material. (NA GG 2.64.05)**

Commentary: FY 2005 target was exceeded as upgrades have been completed at 234 sites (versus a target of 174). This accomplishment is important because it significantly reduced the amount of at-risk radiological material that otherwise could have been used to fabricate a RDD or dirty bomb.

Documentation: Monthly report from the International Radiological Threat Reduction integrated contract database.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

General Goal 3: Naval Reactors

General Goal 3: Naval Reactors

Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
5	0	0	0

FY 2005 Program Costs ($ in Millions): $810

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Naval Reactors Provide the Navy with safe, militarily effective nuclear propulsion plants and ensure their continued safe and reliable operation.

Commentary: During FY 2005 Naval Reactors exceeded two targets and fully met the other three targets. All schedules were met on time and cost performance was within established tolerances. These accomplishments are significant because they enable Naval Reactors to continue to provide the United States Navy with safe, reliable, and militarily effective nuclear propulsion plants.

FY 2005 Annual Targets

G **Achieve 132 million cumulative miles of safe reactor plant operation supporting National security requirements (NA GG 3.49.01)**

Commentary: FY 2005 target was exceeded as data collected to date states that 133,419,169 cumulative miles have been safely steamed (target was 132,000,000), with over two million miles steamed in FY 2005.

Documentation: Results are documented in the "Commissioned Ship Operating Reports."

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Achieve 90 percent annual utilization factor for operation of test reactor plants. (NA GG 3.49.02)**

Commentary: FY 2005 target was exceeded as a utilization factor of 94% for operation of test reactor plants was achieved. This achievement is important because it represents a cost-effective way of training Naval nuclear plant operators.

Documentation: Results are documented in the "Prototype Annual Activity Schedule."

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Naval Reactors (con't)

G **Achieve 23 percent cumulative of core conceptual design for the Transformational Technology Core (TTC) reactor plant, and initiate final design and development work. (NA GG 3.49.03)**

Commentary: FY 2005 target was fully met by completing a cumulative 23% of the TTC reactor plant design including key milestones such as the selection of a fuel system, completion of Control Drive Mechanism extended use evaluation, and completion of VIRGINIA Class Heavy Equipment design evaluation. This achievement is important because it provides the Navy with next-generation propulsion plant technology which is safer, more silent, more reliable, and more cost-effective in producing more power with less fuel and waste.

Documentation: Results are documented in the TTC Planning Estimates.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Complete 70 pe rcent (cumulative) of the next-generation aircraft carrier reactor plant design. (NA GG 3.49.04)**

Commentary: FY 2005 target was fully met by completing 70% of the next-generation aircraft carrier reactor plant design including key milestones such as the completion of the head area mockup demonstration, the completion of the Engineered Safeguards System closure and internal piping Design Justification Report, and the development of the final thermal capability strategy and plant parameter adjusted set-point strategy. This achievement is important because it provides the Navy with next-generation propulsion plant technology which is safer, more silent, more reliable, and more cost-effective in producing more power with less fuel and waste.

Documentation: Results are documented in the Carrier Vessel, Nuclear (CVN) 21 Propulsion Plant Planning Estimate.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve 100 percent of annual program operations with no adverse impact on human health or the quality of the environment. (NA GG 3.49.07)**

Commentary: FY 2005 target was fully met based on a review of radiation monitoring results through September 30, 2005. This review confirms that no personnel at the Primes have exceeded five rem exposure this fiscal year.

Documentation: Results are documented in Report RA-05, Occupational Safety, Health and Occupational Medicine Report, the Annual Environmental Monitoring Report, and Report NT-05-3, Occupational Radiation Exposure for NR Department of Energy Facilities.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

General Goal 4: Energy Security

General Goal 4: Energy Security

Improve energy security by developing technologies that foster a diverse supply of reliable, affordable, and environmentally sound energy by providing for reliable delivery of energy, guarding against energy emergencies, exploring advanced technologies that make a fundamental improvement in our mix of energy options, and improving energy efficiency.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
93	7	5	0

FY 2005 Program Costs ($ in Millions): $6,617

FY 05	FY 04	FY 03	FY 02
Y	Y	G	G

Program Goal: Hydrogen/Fuel Cell Develop hydrogen production, storage, and delivery technologies to the point that they are cost and performance competitive and are being used by the Nation's transportation, energy, and power industries. (EE GG 4.01)

Commentary: Meeting technology and cost targets in the concurrent technology paths of hydrogen production and delivery, storage, and fuel cell power are key contributions to meeting the Hydrogen Posture Plan goals. This will ultimately provide the nation with hydrogen from diverse domestic resources, and enable its use in a clean, safe, reliable, and affordable manner in fue1 cell vehicles and stationary power applications.

FY 2005 Annual Targets

G **Complete testing of 10,000 psi hydrogen storage tanks, evaluating against the 2007 target of 1.5 kWh/kg (4.5 weight percent) and identify approaches to meet the cost target of $6/KWh. (EE GG 4.01.01)**

Commentary: The Program fabricated and tested high pressure storage tanks showing potential to achieve 1.75 kWh/kg (exceeding the 2007 target), and approaches such as localized reinforcement techniques and optimum fiber placement were identified as fabrication options with potential to meet the cost target of $6/KWh. These achievements are a key step in demonstrating tanks as a viable hydrogen storage technology for the transition phase of the hydrogen economy- which would aid in the reduction of U.S consumption of petroleum.

Documentation: Quarterly technical progress reports from Quantum and LLNL.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Complete the research for a distributed natural gas-to-hydrogen production and dispensing system that can produce 5,000 psi hydrogen with good potential for achieving the cost target of $3.00/gge. (EE GG 4.01.02)**

Commentary: Research was completed on three natural gas-to-hydrogen development projects: "Autothermal Cyclic Reforming Based Hydrogen Generating & Dispensing System" (General Electric), "Development of a Natural Gas-to-Hydrogen Fueling Station" (Gas Technology Institute), and "Development of a Turn-Key Hydrogen Refueling System" (Air Products and Chemicals). These activities support the Program's 2015 goal of $2 to $3/gallon gasoline equivalent independent of production pathway.

Program Goal: Hydrogen/Fuel Cell (con't)

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Identify materials with the potential to meet 2010 targets of 2.0 kWh/kg (6 weight percent), 1.5 kWh/L. (EE GG 4.01.03)**

Commentary: The Program identified several classes of materials that have the potential to meet the 2010 system targets, such as destabilized metal hydrides, a family of ethyl carbazole liquids, and aluminum hydride. These results are a key step towards meeting hydrogen storage targets for commercially viable hydrogen powered vehicles - accelerating the reduction in U.S. dependence on petroleum imports.

Documentation: Presentation of Hydrogen Storage Testing Workshop Findings at FreedomCAR Tech Team; quarterly technical progress and international conference proceedings.

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the Hydrogen/Fuel Cell Program FY 2004 end of year adjusted uncosted baseline ($29,283K) until the target range is met. (EE GG 4.01.04)**

Commentary: Meeting this target to reduce the Hydrogen/Fuel Cell Technologies Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to develop hydrogen production, storage, and delivery technologies to the point that they are cost and performance competitive and are being used by the Nation's transportation, energy, and power industries.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Y **Complete validation of an energy station that can produce 5,000 psi hydrogen from natural gas for $3.60 per gallon of gasoline equivalent (including co-production of electricity), untaxed at the station with mature production volumes (e.g., 100 units/year). (EE GG 4.01.05)**

Commentary: All data for the hydrogen production from natural gas cost analysis has been generated, but the analysis was delayed into next fiscal year due to Air Products and Chemicals Inc. resources being moved to support Hurricane Katrina. This activity will demonstrate that co-production of hydrogen and electricity is cost effective and technically feasible to support the fuel demands of a hydrogen economy of the future.

Plan of Action: All data has been generated for the economic analysis and it is anticipated the analysis will be completed by the end of the first quarter of FY 2006.

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Hydrogen/Fuel Cell (con't)

G **Model cost of hydrogen produced from renewables and assess versus the target (2010 target of $2.85/gge (untaxed) at the station at 5000 psi). (EE GG 4.01.06)**

Commentary: Electrolyzer tests and price-modeling activities showed that hydrogen can be produced, compressed and stored from wind for $2.80/kg in the 2010 timeframe. This achievement is a key step toward demonstrating the viability of producing hydrogen and the critical technology of electrolysis to obtain cost effective hydrogen from renewables, to help reduce petroleum usage.

Documentation: Quarterly technical progress reports provided by the Golden Office and the National Energy Technology Laboratory

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

Y **Demonstrate Fuel Cell demonstration vehicles' durability, projected to 1,000 hours based on voltage measurements. (EE GG 4.01.10)**

Commentary: While fuel cell vehicle operational data was received from industry in FY 2005, the number of hours operated was insufficient to assess degradation and project fuel cell durability out to 1,000 hours due to a delay in the delivery of the fuel cell vehicles. Durability is a critical factor in the commercialization decision of hydrogen fuel cell vehicles, since fuel cell vehicles need to have a lifetime that competes with gasoline internal combustion engine vehicles (5,000 hours).

Plan of Action: DOE will work with its industry partners to collect the necessary hours of operating data during the first two quarters of FY 2006, so that projections of the fuel cell durability can be made by the end of second quarter of FY 2006.

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Reduce technology cost, through DOE-sponsored research, for a hydrogen-fueled 50kW fuel cell power system to $125/kW. (EE GG 4.01.11)**

Commentary: Based on a fuel cell system cost estimate performed by TIAX using DOE-sponsored research results, automotive fuel cell system technology cost was reduced from $275/kW in 2002 to approximately $120/kW in 2005 (at 500,000 units per year) for a hydrogen-fueled 50kW fuel cell power system. This accomplishment is an important step towards the 2015 target of $30/kW which is competitive with the cost of gasoline internal combustion engines.

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

Program Goal: Hydrogen/Fuel Cell (con't)

G **Achieve 32 percent efficiency at full power for a natural gas or propane fueled 5-250kW stationary fuel cell system. (EE GG 4.01.12)**

Commentary: The Hydrogen Technology Program achieved greater than 32 percent electrical efficiency at full power for a 5-250kW natural gas stationary fuel cell system by IdaTech in Bend, Oregon, a step toward the 2010 electrical efficiency target of 40 percent. This will allow use of hydrogen for electric power generation diversifying the grid and enhancing reliability.

Documentation: Quarterly technical progress reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
Y	Y	G	Y

Program Goal: Vehicle Technologies Develop technologies that enable cars and trucks to become highly efficient, through improved power technologies and cleaner domestic fuels, and to be cost and performance competitive. (EE GG 4.02)

Commentary: Technical advances such as carbon fiber price reductions, vehicle combustion efficiency, reductions in parasitic loss, and reductions in battery costs demonstrate progress that will enable cars and trucks to become highly efficient by means of research and development on clean power technologies, improved domestic fuel specifications, and advanced power systems. These advances will address our most pressing national energy need - reducing oil dependence.

FY 2005 Annual Targets

G **Complete R&D on technologies, which, if implemented in high volume, could reduce the projected (i.e. modeled) bulk cost of automotive-grade carbon fiber to less than $4.50/pound. (EE GG 4.02.10)**

Commentary: The Vehicle Technologies Program was able to meet this target using microwave assisted plasma and microwave oxidation technologies at Oak Ridge National Laboratory. This achievement will enable cars and trucks to become more efficient and cost and performance competitive, and ultimately help reduce both energy use and greenhouse gas emissions.

Documentation: Progress reports, laboratory tests, and the use of a cost model.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **R**

Program Goal: Vehicle Technologies (con't)

G **Achieve brake thermal efficiencies of 39 percent for light vehicle combustion engines, and greater than 45 percent for heavy vehicle combustion engines, while meeting EPA 2007 emission standards (1.2 g/hp-hr NOx). (EE GG 4.02.11)**

Commentary: By achieving the targets for improved combustion efficiency, the Vehicle Technology Program has demonstrated a 30 percent improvement in light engine fuel-economy compared to engines in 2002 and a 12 percent improvement in heavy engine fuel-economy compared to 2002. This enables cars and trucks to become highly efficient through improved power technologies, and will lead to improved energy security by reducing dependence on oil.

Documentation: Progress reports and laboratory tests.

Related Prior Year Target Performance: FY 2004: Y FY 2003: G FY 2002: NA

Y **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the programs FY 2004 end-of-year adjusted uncosted baseline ($73,102K), until the target range is met. (EE GG 4.02.12)**

Commentary: The Freedom Car and Vehicle Technology Program's level of uncosted obligations was reduced by 8 percent from the previous year. This exceeds the appropriate range (i.e., 20-25 percent) which would avoid disruptions of activities, while ensuring that the program's major and critical activities to enable highly efficient cars and trucks are contractually obligated and carried out in a timely manner.

Plan of Action: The Program is actively working to ensure that the uncosted obligations level is reduced to the appropriate level (20-25 percent) through a variety of means including the obligation of funds early in the year, reviewing performers' cash flow to make appropriate adjustments in funding, and conducting monthly reviews with the Program Management Center and the national laboratories to assess and correct problem areas early in the year.

Documentation: DOE STARS Financial Database (10/18/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Vehicle Technologies (con't)

G **Reduce parasitic energy loss to 25 percent of total engine output and reduce unloaded tractor-trailer weight to 22,000 pounds. (EE GG 4.02.13)**

Commentary: In completing this target, the Vehicle Technology Program demonstrated that implementing technology advancements (to reduce friction, improve engine lubrication and reduce aerodynamic losses) and utilizing better materials and designs (while maintaining strength) for tractor trailers, leads to improved operating efficiencies. Ultimately, manufacturers and consumers will be able to use these technologies to help the Nation reduce both energy use and greenhouse gas emissions thus improving energy security by dramatically reducing dependence on oil.

Documentation: Laboratory tests, over-the-road vehicle tests, and progress reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Reduce high power, 25kW, light vehicle, lithium ion battery cost to $900 per battery system. (EE GG 4.02.14)**

Commentary: In achieving this target, the Vehicles Technology Program was able to lower the projected system cost of a lithium ion battery system to $862.50 (or $34.50 per kilowatt). This in turn contributes to achieving the 2010 cost goal of $500 per 25kW battery system while meeting hybrid electric vehicle performance requirements.

Documentation: Award of contract, paper analysis, laboratory test evaluation, and the use of a cost model.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Solar Energy Improve performance of solar energy systems and reduce development, production, and installation costs to competitive levels. (EE GG 4.03)

Commentary: The increase in conversion efficiency of commercial production crystalline silicon photovotaic modules to 13.5 percent and thin-film photovoltaic (PV) modules to 11 percent maintains the program's technical progress. This will allow solar energy system prices to be reduced to help meet the critical national objectives of improving national energy security, providing for a cleaner environment, and ensuring continued economic growth and development.

FY 2005 Annual Targets

G **Achieve 5.0 cents per kilowatt-hour modeled cost of energy from solar water heater capable of operating in non-freezing climates. (EE GG 4.03.01)**

Commentary: By demonstrating 5.0 cents per kilowatt-hour modeled cost of energy from a solar water heater capable of operating in non-freezing climates, improved performance and cost efficiency of the technology was demonstrated. This will help in accelerating usage to make a significant contribution to a clean, reliable and flexible U.S. energy supply.

Documentation: National Renewable Energy Laboratory Technical Reports

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Verify, using standard laboratory measurements, a conversion efficiency of 13.5 percent of U.S-made, commercial crystalline silicon PV modules. Production cost of such modules is expected to be $1.95 per Watt. (EE GG 4.03.02)**

Commentary: Achieving a commercial crystalline silicon PV module efficiency of 13.7 percent, with a modeled production cost of $1.95 per watt, demonstrates progress towards the 2010 goal of 20 percent conversion efficiency and a commercial production cost of $1.55 per watt. This would be a significant contribution to a clean, reliable and flexible U.S. energy supply.

Documentation: Standard quarterly laboratory reports from the PV Performance Characterization Group at the National Center for Photovoltaics (NCPV) at National Renewable Energy Laboratory.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Solar Energy (con't)

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end-of-year adjusted uncosted baseline ($19,342K), until the target range is met. (EE GG 4.03.03)**

Commentary: Meeting this target to reduce the Solar Technologies Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to improve performance of solar energy systems and reduce development, production, and installation costs to competitive levels.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Develop thin-film PV modules with an 11.0 percent conversion efficiency that are capable of commercial production in the U.S. (EE GG 4.03.04)**

Commentary: By demonstrating a thin-film PV module with an 11 percent conversion efficiency that is capable of commercial production, the program has made continued progress towards the 2020 goal of 18 percent conversion efficiency. This will allow significant contribution to a clean, reliable and flexible U.S. energy supply.

Documentation: Standard quarterly laboratory reports from the PV Performance Characterization Group at the National Center for Photovoltaics (NCPV) at NREL.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
Y	Y	Y	Y

Program Goal: Building Technologies Develop cost effective tools, techniques and integrated technologies, systems and designs for buildings that generate and use energy so efficiently that buildings are capable of generating as much energy as they consume. (EE GG 4.04)

Commentary: Progress in building technologies has included: the issuance of final test procedures for four commercial products; major advances in competitively awarded projects that will support the solid state lighting goal of 200 lumens per Watt in a laboratory device by 2025; and completion of four "Best Practices Building America Guide" documents. This progress supports the realization of highly efficient homes that use 70 percent less energy.

FY 2005 Annual Targets

G **Complete the research for production-ready new residential buildings that are 30 percent more efficient than the whole-house Building America benchmark in 2 climate zones and document the results in Technology Package Research Reports. (EE GG 4.04.10)**

Commentary: This target was achieved based on three years of research, construction and testing, in collaboration with lead builders, of homes that use 30 percent less energy than the Building America benchmark in the hot-dry/mixed-dry climate and cold climate. This effort contributes to the development of integrated technologies, systems and designs for buildings that can be up to 70 percent more energy efficient.

Documentation: NREL and Building America Consortia Technical Reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Y **Complete a prototype dynamic window that will have a solar heat gain coefficient range of 0.05 to 0.6 and will meet American Society for Testing Materials (ASTM) durability standards for cycling in a high temperature, high ultraviolet light environment. (EE GG 4.04.11)**

Commentary: DOE reviewed and made a decision to continue two projects that will develop prototypes meeting the set criteria: a platinum organic based dynamic device, and a device using dilute hydrogen as the catalyst. These prototypes will enable window with enhanced efficiency to support ultimately building homes that are 70 percent more energy efficient.

Plan of Action: Since the projects are still in the infancy of the developmental cycle, the Department will conduct initial ASTM testing and characterization of one prototypes by the end of the first quarter in FY 2006 to determine if it meets the identified standards.

Documentation: LBNL and NREL technical and quarterly progress reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Building Technologies (con't)

G **Complete assessments of controls technology, optimization methods and market opportunities, with substantial input from designers and building owners, to establish a framework for development of programmatic pathways to achieve 50 percent or better energy performance in significant numbers of buildings, enabling development of design technology packages for new commercial buildings. (EE GG 4.04.12)**

Commentary: The Buildings Technology Program completed an evaluation of the potential for optimization methods to provide a basis for developing design strategies, a study of the energy savings potential of advanced controls technology and a market study developing prototypical product concepts for high-performance buildings which were tested with a variety of audiences. These provide pathways to realize the goal of developing cost-effective designs for commercial buildings such that they produce as much energy as they use on an annual basis.

Documentation: NREL Technical and quarterly progress reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

R **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($33,417K) until the target range is met. (EE GG 4.04.13)**

Commentary: The Building Technology Program's level of uncosted obligations exceeds the appropriate range (i.e., 20-25 percent) which would avoid disruptions of activities, while ensuring that the program's major and critical activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to allow buildings to generate and use energy so efficiently that they are capable of generating as much energy as they consume.

Plan of Action: The Buildings Technology Program is actively working to ensure that the uncosted obligations level is reduced to the appropriate level (20-25 percent) by conducting solicitations at the end of the fiscal year and making awards early in the next fiscal year to maximize the period of performance for awardees; reviewing performers' cash flow and making appropriate adjustments in funding; and developing Annual Operating Plans in the spring in order to be able to obligate funds as soon as appropriations are final.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

Program Goal: Building Technologies (con't)

G **Analyze and develop code change proposals that are expected to result in a cost-effective improvement in energy efficiency in commercial buildings of approximately 1-2 percent. (EE GG 4.04.14)**

Commentary: The Department of Energy conducted analyses to support the prioritized list of cost-effective/energy efficient DOE sponsored/supported code change proposals to the next generation International Energy Conservation Code for commercial buildings. The approved proposals concerning more stringent solar heat gain coefficient requirements for windows, new exterior lighting requirements and simplified lighting power density requirements would result in energy efficiency savings of 1 to 2 percent compared to the 2003 International Energy Conservation Code.

Documentation: All IECC approved and accepted code changes printed in the IECC monograph.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **R**

G **Analyze and develop code change proposals that are expected to result in a cost-effective improvement in energy efficiency in residential buildings of approximately 1-2 percent. (EE GG 4.04.15)**

Commentary: The Buildings Technology Program conducted analyses to support the prioritized list of cost- effective/energy efficient DOE sponsored/supported code change proposals to the next generation International Energy Conservation Code for residential buildings. While DOE recommended code change proposals would have resulted in energy efficiency savings of 1 to 2 percent compared to the 2003 International Energy Conservation Code, they were rejected in the ballot process resulting in stringency levels of the 2006 code that are roughly equivalent to the 2003 code.

Documentation: Analytical reports, code change proposals, DOE public and stakeholder comments and testimony.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Complete analytical and regulatory steps necessary for DOE issuance of 3-4 rules, consistent with enacted law, to amend appliance standards and test procedures that are economically justified and will result in significant energy savings. (EE GG 4.04.16)**

Commentary: DOE published final test procedures for four commercial products in the Federal Register and is completing the analytical and regulatory steps necessary to issue Notice of Proposed Rulemaking for two products: residential furnaces & boilers and distribution transformers. Advancing economically justified appliance standards for these products will result in significant savings.

Documentation: Transcripts from workshops and comments received summary of comments, draft report on manufacturing impact analysis and Technical Support Document(s).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **R** FY 2002: **G**

Program Goal: Building Technologies (con't)

G **Complete a thermodynamic study of emerging refrigerants. Based on study results, make go/no-go decision on initiation of first stage development of a laboratory prototype, high efficiency residential 1-ton air-conditioning and heat pump unit that uses a novel approach to the vapor compression refrigeration cycle and has the potential for a Seasonal Energy Efficiency Ratio (SEER) of over 20. (EE GG 4.04.17)**

Commentary: The Building Technologies Program completed a thermodynamic study of emerging refrigerants, and made a go/no-go decision on the resulting high efficiency residential 1-ton air conditioning and heat pump prototypes. By verifying the potential to achieve an equivalent Seasonal Energy Efficient Ratio (SEER) of over 20, the Program demonstrates progress towards reducing energy demand in buildings by 70 percent.

Documentation: ORNL Quarterly Progress Report.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Select five new competitively based research awards for cost-shared research on technology (such as optical materials and device structures) to achieve greater than 65 lpw of white light from solid-state devices with industry, national labs, and universities. (EE GG 4.04.18)**

Commentary: The solid state lighting program completed awards for five (5) competitively selected projects with industry teams and demonstrated 65 lumens/Watt in a white-light, pre-production prototype device. This will contribute to the goal of 160 lumens/Watt and $11/kilo-lumen of white light from solid state lighting devices by 2025 helping to provide double the efficacy of today's most efficient lighting.

Documentation: Publication of awards, workshop documentation, and solicitation announcement with statement of need.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	G	G	NA

Program Goal: Wind Energy By 2012, complete program technology research and development, collaborative efforts, and provide the technical support and outreach needed to overcome barriers - energy cost, energy market rules and infrastructure, and energy sector acceptance - to enable wind energy to compete with conventional fuels throughout the nation in serving and meeting the Nation's energy needs. (EE GG 4.05)

Commentary: Program made progress against the 2012 goal of reducing the cost of electricity from large wind systems in class four winds to 3 cents per kilowatt hour for onshore systems and 5 cents per kilowatt hour for offshore systems. This will contribute directly to DOE's mission of improving national, energy and economic security and address the President's National Energy Policy call for increasing the diversity of our Nation's energy resources.

FY 2005 Annual Targets

Y

***(Low Wind Speed Technology)* Complete fabrication and begin testing advanced variable speed power converter. Test first advanced blade, incorporating improved materials and manufacturing techniques. Field test the first full-scale Low Wind Speed Technology prototype turbine. *(Distributed Wind Technology)* Complete prototype testing of 1.8 KW Small Wind Turbine, finishing the International Electrotechnical Commission suite of tests for acoustics, power, durability, and safety. *(Technology Acceptance)* Achieve 32 states with over 20 MW installed; 16 states with over 100 MW installed. (EE GG 4.05.01)**

Commentary: The Wind Program achieved its R&D targets for low wind speed technology and distributed wind technology that are key to reducing the cost of energy of advanced large scale and small scale wind turbines, enabling wind turbines to be more competitive with conventional electricity supply technologies, however the targets for technology acceptance were not met (21 states have attained 20 MW and 15 states have reached 100 MW of wind generation). Broader deployment was delayed as a result of business decision uncertainty around continued federal tax policy and implementation of target state policies that create incentives for wind development. The completion of all of the Wind Program's activities will result in significant growth in wind installations to help meet increasing U.S. energy needs.

Plan of Action: Since states with mature markets experienced near record construction of wind facilities, the technology acceptance target (16 states with over 100 MW installed) will be met by the end of the calendar year.

Documentation: Verified by monthly reports from contractor/national labs including the Denver Regional Office, the National Renewable Energy Laboratory, and the Western Area Power Administration.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: NA

Program Goal: Wind Energy (con't)

G

Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($18,317K) until the target range is met. (EE GG 4.05.02)

Commentary: Meeting this target to reduce the Wind Technology Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to enable wind energy to compete with conventional fuels throughout the nation in serving and meeting the Nation's energy needs.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	G	NA

Program Goal: Hydropower Conduct the R&D necessary to improve hydropower's operational and environmental performance so that hydropower generation is increased because of its affordability, abundance, reliability and environmental benefits. (EE GG 4.06)

Commentary: Program made progress in the advancement of a new aerating turbine that improved dissolved oxygen concentrations, which in turn helps address a key environmental barrier to hydropower relicensing, namely, fish survivability and growth. This will support the development of new and incremental hydropower capacity, adding to the diversity of the Nation's energy supply.

FY 2005 Annual Targets

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($3,022K) until the target range is met. (EE GG 4.06.01)**

Commentary: Meeting this target to reduce the Hydropower Technology Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to increase the viability of hydropower, the Nation's most widely used renewable energy source, without construction of new dams.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Complete prototype testing at the Osage project that demonstrates 2 mg/l improvement in oxygen content of water downstream of the hydropower plant. (EE GG 4.06.02)**

Commentary: Meeting this target demonstrated that the benefits of dissolved oxygen mitigation from the new aerating turbine typically extend many miles downstream and improve both water quality and biological parameters, such as fish growth and survival. This is important to help overcome one of the major environmental barriers to hydropower re-licensing thereby increasing the viability of hydropower, the Nation's most widely used renewable energy source, without construction of new dams.

Documentation: Verified by quarterly reports from national labs on biological design criteria project progress and a final report.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	R	G	G

Program Goal: Geothermal Technology Improve performance and reduce market entry costs of geothermal energy to competitive levels. In quantitative terms, the goal is to reduce the levelized cost of power generated from conventional geothermal sources from 5 to 8 cents per kWh (kilowatt hour) in 2000 to 3 to 5 cents per kWh by 2010. (EE GG 4.07)

Commentary: Progress made in the fully integrated Diagnostics-While-Drilling project will help reduce overall geothermal plant costs to get to 2010 goals of achieving 3 to 5 cents kWh. The improved performance of geothermal will support the critical national objectives of improving the national energy security, providing for a cleaner environment, and ensuring continued economic growth and development.

FY 2005 Annual Targets

G **Field test a fully integrated Diagnostics-While-Drilling (DWD) advanced drilling system in a high-temperature geothermal well, verifying control of drilling operations in real time, thereby reducing costs. (EE GG 4.07.01)**

Commentary: Successfully completing the field test and verifying control of drilling operations in real time demonstrated the potential for reducing drilling costs. This is an important step in reducing market entry costs of geothermal energy to competitive levels thereby helping to reduce the levelized cost of power generated from conventional geothermal sources from 5 to 8 cents per kWh in 2000 to 3 to 5 cents per kWh by 2010.

Documentation: Quarterly report from Sandia National Laboratories.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($21,644K) until the target range is met. (EE GG 4.07.02)**

Commentary: Meeting this target to reduce the Geothermal Technology Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to improve performance and reduce market entry costs of geothermal energy to competitive levels.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	Y	Y	R

Program Goal: Biomass and Biorefinery Systems R&D Develop biorefinery-related technologies to the point that they are cost- and performance-competitive and are used by the Nation's transportation, energy, chemical and power industries to meet their market objectives. (EE GG 4.08)

Commentary: Advances and completions in the biomass targets maintain the technology road map goals needed for biomass products to move into the marketplace at competitive prices. This research, development and demonstration aimed at bringing to the market domestically produced bio-based transportation fuels, power, and products (i.e. chemicals and materials) will help reduce our dependence on foreign oil.

FY 2005 Annual Targets

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the Biomass & Biomass Refinery Systems Program FY 2004 end of year adjusted uncosted baseline ($62,235K) until the target range is met. (EE GG 4.08.01)**

Commentary: Meeting this target to reduce the Biomass and Biorefinery Systems Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to develop biorefinery-related technologies to the point that they are cost- and performance-competitive.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Complete a technical and economic evaluation of integrated biomass to fuels systems to validate the sugar cost of $0.135 per pound and syngas cost of $6.13 per million Btu. (EE GG 4.08.03)**

Commentary: Technical and economic validation of integrated biomass to fuels systems with the intermediate sugar cost of $0.12 per pound and syngas cost of $6.13 per million Btu showed progress towards the 2012 cost goals of $5.28 per million Btu (syngas) and $0.10 per pound (intermediate sugar). This will lead to the domestically produced bio-based transportation fuels and power that will help reduce our dependence on foreign oil.

Documentation: NREL Design Report and Technical and Quarterly Progress Reports.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Biomass and Biorefinery Systems R&D (con't)

G **Establish the technical and market potential of a new biobased product. (EE GG 4.08.10)**

Commentary: The Biomass Program established the technical and market potential of biological production of a new biorefinery platform chemical, 3 hydroxy propionic acid (3HP) from sugars with Codexis and Cargill. This could be used as an intermediate for acrylic acid, a feedstock for a wide range of water soluble and commodity plastics such as the super absorbent materials used in personal care items and disposable diapers.

Documentation: Technical and Quarterly Progress Reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	Y	Y

Program Goal: Weatherization Increase the energy efficiency of dwellings occupied by low-income Americans, thereby reducing their energy costs, while safeguarding their health and safety. (EE GG 4.09)

Commentary: Working directly with the States to weatherize almost 100,000 low-income homes with DOE funding has helped advance the President's commitment to make energy more affordable for low-income consumers while reducing the nation's use of conventional fossil fuels.

FY 2005 Annual Targets

G **Weatherize 92,500 homes, with DOE funds, and support the weatherization of approximately 100,000 additional homes with leveraged funds. (EE GG 4.09.10)**

Commentary: Weatherizing 99,756 low-income homes with DOE funding and an additional 100,000 homes with funding from other sources will reduce low-income energy bills and reduce energy consumption. This advances the President's commitment to make energy more affordable for low-income consumers while reducing the nation's use of conventional fossil fuels.

Documentation: State reporting through Windows Systems Approach to grants Administration (WinSAGA) data reporting system.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

Program Goal: Weatherization (con't)

G **Update the energy savings benefit-cost ratio and savings per DOE dollar invested as part of a national evaluation of the program. (EE GG 4.09.11)**

Commentary: A full scale national evaluation of the program is currently being planned, meta-evaluations conducted by ORNL on behalf of the program indicate annual savings in program year 2004 of 13,393 BTU per dollar invested (previous 2002 baseline was 13,245). While not independently reviewed, the program believes that the estimates appear reasonable. Using information from the forthcoming national evaluation, the program believes that program performance can be further improved to increase energy efficiency of swelling occupied by low-income Americans, thereby reducing their energy costs, while safeguarding their health and safety.

Documentation: WAP Evaluation Plan.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	NA	NA

Program Goal: State Energy Programs Strengthen and support the capabilities of States to promote energy efficiency and to adopt renewable energy technologies. (EE GG 4.10)

Commentary: The State Energy Program assisted states in developing energy plans and fostered clean, reliable, and diverse energy supplies by developing and delivering meaningful and effective energy programs specific to state level needs and delivery systems. This has resulted in a significant energy savings benefits through promotion of technologies which are energy efficient and energy sources which are renewable.

FY 2005 Annual Targets

G **Achieve an annual energy savings of 10,250,000 million source BTUs and $64,780,000 in annual energy cost savings with DOE funds. Achieve an annual energy savings of 36,695,000 million source BTUs and $231,912,400 in annual energy cost savings with leveraged funds. (EE GG 4.10.10)**

Commentary: The State Energy Program uses factors developed by ORNL to estimate energy savings from SEP funded activities. The ORNL methodology was reviewed by the International Program Evaluation Board of Directors in February 2005. Based on these estimates, the program determined that it has provided both immediate and future reductions in energy consumption for residential consumers, state and local governments, schools, hospitals, small businesses and agriculture using $46.2 million of DOE funds and $494 million in leverage dollars to yield an estimated annual energy savings of 47.6 trillion BTUs and cost savings of $333.6 million.

Documentation: Windows Systems Approach to Grants Administration (WinSAGA) reporting. Regional Office monitoring and reporting. ORNL Report, "An Evaluation of SEP Accomplishments, Program Year 2002 (ORNL/CON-492)," June 2005. "A Review of State Energy Program Performance Metrics," Board of Directors of the International Energy Program Evaluation Conference, Inc., February 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: State Energy Programs (con't)

G **Update BTU to dollar calculation derived from 2003 metrics study to establish a new baseline to allow the program to track a performance efficiency of BTUs saved per federal dollar invested. (EE GG 4.10.11)**

Commentary: The program contracted with ORNL to update the factors and estimates related to the BTU to dollar calculation, which has been reviewed by the International Program Evaluation Board of Directors. The program believes that this study will provide useful guidance to the States to encourage activities with high energy savings.

Documentation: ORNL Report, "An Evaluation of SEP Accomplishments, Program Year 2002 (ORNL/CON-492)," June 2005, and "A Review of State Energy Program Performance Metrics," Board of Directors of the International Energy Program Evaluation Conference, Inc., February 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
Y	Y	G	G

Program Goal: Intergovernmental Activities Fund activities that facilitate the movement of energy efficient and renewable energy products into the market place and the integrated deployment of efficiency and renewable resources to communities and customers. Accelerate the adoption of clean, efficient and domestic energy technologies through efficient intergovernmental demonstration and delivery of cost-effective energy technologies which will benefit the public through improved energy productivity and reduced demand and particularly reduce the burden of energy cost on the disadvantaged. (EE GG 4.11)

Commentary: Through its many activities (International Renewable Energy Program; Tribal Energy Activities; Renewable Energy Production Initiative; Energy Star; Rebuild America; Clean Cities; Commercial and Residential Codes; Inventions and Innovations; and Energy Efficiency Information Outreach), the Intergovernmental Activities Program provided highly leveraged technical assistance in targeted communities accelerating the adoption of clean cost-effective energy efficient technologies. These activities benefit the public by improving energy productivity, reducing demand, and lessening the burden of energy costs on the disadvantaged.

FY 2005 Annual Targets

G **Help Rebuild America community partnerships to upgrade 60 million square feet of floor space in K-12 schools, colleges, public housing, and State/local governments, reducing the average energy used in these buildings by 18 percent. (EE GG 4.11.01)**

Commentary: Rebuild America upgraded approximately 169 million square feet of floor space in K-12 schools, colleges, public housing, and State/local governments, thus exceeding this target by over 200 percent. The deployment of energy efficient resources via this effort resulted in an average 18 percent reduction in the amount of energy used in these buildings.

Documentation: Rebuild America partner website reports.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Intergovernmental (con't)

Y **Provide direct technical assistance to tribal nations including: four development workshops, two to three economic development projects, eight to ten "first steps" efforts, and six to ten feasibility studies, working toward goal of 100 MW of generation in Indian country by 2010. (EE GG 4.11.02)**

Commentary: After holding four development workshops and conducting two competitive solicitations, the Tribal Energy Program made a programmatic decision to fund only one economic development project rather than the two to three anticipated, in order to fund a greater number of Feasibility Studies (seven) and "First Steps" projects (ten). This decision was based upon the potential for success of these projects and the best use of program funds in meeting the goal of generating 100MW of energy in Indian Country by 2010 using clean, efficient and domestic energy technologies.

Plan of Action: There is no need to take any further action to make up for the reduced number of economic development projects since the program decided to fund a greater number of Feasibility Studies and "First Step" projects.

Documentation: Workshop Information, solicitations and awards provided by lab reports.

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Provide technical assistance to States resulting in four States adopting upgrade d 2001 and 2003 model commercial or residential building energy codes. (EE GG 4.11.03)**

Commentary: Meeting this target resulted in seven States adopting upgraded 2001 and 2003 model commercial or residential building energy codes and the training of over 3,000 architects, engineers, builders, and code officials to implement and enforce these codes. This program believes that its effort may contribute to saving 72 trillion BTUs and $509 million in consumer costs in 2010.

Documentation: State reports in Status of State Codes at http://www.energycodes.gov. Quarterly state reports on building energy code special projects grants in WinSAGA.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Intergovernmental (con't)

G **Clean Cities will conduct seven major workshops, award $4 million in special project funding for alternative fuel, anti-idling, and hybrid technology, and provide technical support to coalitions. The program will report a total number of 198,000 alternative fuel vehicles in operation in clean cities. Achieving these outcomes will result in an estimated displacement of 168 million gallons of petroleum based fuels and 70 new ethanol fueling stations. (EE GG 4.11.04)**

Commentary: By conducting seven major workshops and awarding $5.4 million in special project funding for alternative fuels, anti-idling devices, hybrid technology and for technical support to local coalitions, the Clean Cities program is able to report 201,000 alternative fuel vehicles in operation which resulted in 244 new ethanol refueling stations and an estimated displacement of 173 million gallons of petroleum based fuels. This program believes that it has facilitated the movement of energy efficient and renewable energy products into the market place.

Documentation: DOE regional offices and contractor report on number of alternative fueled vehicles.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($52,046K) until the target range is met. (EE GG 4.11.05)**

Commentary: Meeting this target to reduce the Intergovernmental Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to accelerate the adoption of clean, efficient and domestic energy technologies.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Provide technical analysis and reviews, data access, training and project support for 7 international clean energy projects which includes: developing two components for GIS tools to analyze U.S. EERE technology export markets; provide phase one and two technical assistance to secure access for EERE technologies to build 1000 MW of generation globally over ten years. (EE GG 4.11.06)**

Commentary: Meeting this target supports the goal of building in the international marketplace over a ten year period, 1000 MW of energy efficient and renewable energy generation technologies.

Documentation: Reports submitted by National Laboratories (including LBNL and NREL).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Intergovernmental (con't)

Y

Recruit 500 additional retail stores, five additional utilities and ten additional manufacturers for the Energy Star program. Complete draft Commercial Window specification. Begin update of Residential Window specification. Expand coordination with all gateway activities. (EE GG 4.11.07)

Commentary: The Energy Star program was successful in recruiting 1195 stores, 23 utilities, and 50 manufacturers to increase the production and sales of ENERGY STAR qualified products thus leading to consumer utility bill savings and reduction of green house gases. However, while the update of the residential window specification was begun, it was determined that commercial window specification should not be started but rather subsumed in a whole buildings concept.

Plan of Action: Based on input from industry and stakeholders, the Department decided creating component criteria (individual windows) where systems performance is more applicable (whole buildings) would not serve the customers (designers, developers, and tenants) in the commercial sector, therefore commercial window specifications will not be started.

Documentation: Store lists submitted by Energy Star retail partners.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
Y	R	G	G

Program Goal: Federal Energy Management Program (FEMP)/Departmental Energy Management Program (DEMP) Provide the efficiency and renewable energy-related technical assistance Federal agencies need to lead the Nation by example through the government's own actions, expressly obtaining Federal renewable energy use of by 2.5 percent by 2005 and reducing energy intensity in Federal buildings by 35 percent by 2010 (using 1985 as a baseline). (EE GG 4.13)

Commentary: The program facilitated, through technical assistance on alternative finance projects, $72 million of private investment awards, trained federal employees in energy management best practices, provided technical and design assistance for 73 energy efficiency and renewable energy projects, and funded energy efficiency projects in DOE. These projects helped FEMP facilitate achieving the goal set forth in Executive Order 13123 of reducing energy intensity in federal buildings by 35 percent in 2010 as compared to the baseline year of 1985. For FY 2005, Federal agencies exceeded their goal of using renewable energy for 2.5 percent of their electricity needs.

FY 2005 Annual Targets

G

Complete the selection for funding of 4 to 13 energy efficiency projects through a competitive selection process that chooses those projects with the greatest return on investment. (EE GG 4.13.01)

Commentary: By funding 13 energy efficiency projects through a competitive selection process that chooses those projects with the greatest return on investment, the Departmental Energy Management Program has contributed to its overall goal of reducing the energy intensity at Department of Energy facilities.

Documentation: Department's Corporate Planning System (CPS).

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: FEMP/DEMP (con't)

R **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the FEMP Program FY 2004 end of year adjusted uncosted baseline ($11,266K) until the target range is met. (EE GG 4.13.02)**

Commentary: The Federal Energy Management Program's level of uncosted obligations exceeds the appropriate range (i.e., 20-25 percent) which would avoid disruptions of activities, while ensuring that the program's major and critical activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to provide the efficiency and renewable energy-related technical assistance Federal agencies need.

Plan of Action: The Program is actively working to ensure that the uncosted obligations level is reduced to the appropriate level (20-25 percent) through a variety of means including the obligation of funds early in the year, the moving up of the decision date for distribution of ad hoc Technical Assistance funds, and the utilization of uncosted funds through special initiatives, including the efforts to increase energy efficiency at Federal agencies in the aftermath of the hurricanes Katrina and Rita.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

G **Provide technical and design assistance for 60 federal projects which include energy efficiency, renewable energy, O&M, Distributed Energy Resources, Combined Heat and Power, SAVEnergy Audits, ALERTS and water conservation projects. (EE GG 4.13.10)**

Commentary: The Federal Energy Management Program in providing technical and design assistance for 73 energy efficiency, renewable energy and other projects, will help attain the goal set forth in Executive Order 13123 of reducing energy intensity in federal buildings by 35 percent in 2010 as compared to the baseline year of 1985.

Documentation: Reports from DOE National Laboratories and other contractors.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Train 4,000 Federal energy attendees in energy management best practices supporting National Energy Policy education goals. (EE GG 4.13.11)**

Commentary: Training 4,844 federal workers supports the goal of reducing energy intensity in federal buildings by 35 percent in 2010 compared to the baseline year of 1985 as set forth in Executive Order 13123.

Documentation: Reports received from the National Laboratory and other contractors who administer the training workshops.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: FEMP/DEMP (con't)

G **Achieve between $60 and $100 million in private sector investment through Super Energy Savings Performance Contracts (ESPCs) which will result in about a 0.2 percent annual reduction in energy intensity. (EE GG 4.13.12)**

Commentary: Agencies awarded $72 million in private sector investment using the Department's Super Energy Savings Performance Contracts (ESPCs). This will result in about a 0.2 percent annual reduction in energy intensity. Use of Super ESPCs is one way to help support the goal of reducing energy intensity in federal buildings by 35 percent in 2010 as set forth in Executive Order 13123.

Documentation: Copy of the awarded contract from the Energy Service Company (ESCO).

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
Y	Y	G	G

Program Goal: Distributed Energy Resources Develop and facilitate market adoption of a diverse array of cost competitive integrated distributed generation and thermal energy technologies in homes, businesses, industry, communities, and electricity companies, increasing the efficiency of electricity generation, delivery, and use, improving electricity reliability, and reducing environmental impacts. (EE GG 4.59)

Commentary: Through successful completion of technical activities to improve microturbines, reciprocating engines, industrial gas turbines for power generation, and thermally activated technologies, the program supports DOE's mission of advancing the national, economic, and energy security of the United States by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy systems.

FY 2005 Annual Targets

G **Complete and document two distributed energy resource (DER)/combined heat and power (CHP) demonstration projects within the high tech industry, contributing to the PART long-term measure of developing a 70 percent efficient CHP integrated system. (EE GG 4.59.10)**

Commentary: Completing a multiple fuel cell combined heat and power project in New Jersey and a combined heat and power turbine installation at a high tech industrial park in Texas will contribute to the long-term measure of developing a 70 percent efficient combined heat and power integrated system. This is an important step in the process to facilitate market adoption of a diverse array of cost competitive integrated distributed generation and thermal energy technologies in homes, businesses, industry, communities, and electricity companies.

Documentation: Quarterly contractor reports and final report.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Program Goal: Distributed Energy Resources (con't)

G **Demonstrate NOx emission levels of 0.25 lbs/MWh from a turbine combustion system. (EE GG 4.59.11)**

Commentary: Achieving this target on two systems (the Catalytica Xonon at the Nuovo Pignone test facility, Italy; and the C200 at Capstone Beta, UC-Irvine) is crucial to the Distributed Energy Resources Program achieving its long term goal of developing a diverse array of cost competitive integrated distributed generation and thermal energy technologies that improve on-site energy reliability, while reducing environmental impacts.

Documentation: Quarterly contractor reports and final report.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **NA**

R **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($21,257K) until the target range is met. (EE GG 4.59.12)**

Commentary: The Distributed Energy Resources Program's level of uncosted obligations exceeds the appropriate range (i.e., 20-25 percent) which would avoid disruptions of activities, while ensuring that the program's major and critical activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to develop and facilitate market adoption of a diverse array of cost competitive integrated distributed generation and thermal energy technologies.

Plan of Action: The Program is actively working to ensure that the uncosted obligations level is reduced to the appropriate level (20-25 percent) through a variety of means including the obligation of funds early in the year, reviewing performers' cash flow to make appropriate adjustments in funding, and developing Annual Operating Plans in the spring in order to be able to obligate funds as soon as appropriations are final.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **NA** FY 2002: **NA**

G **Complete a case study on a combined heat and power (CHP) installation that uses heat from a microturbine to provide plate tank heating and sludge drying at an industrial facility, contributing to the PART long-term measure of developing a 70 percent efficient CHP integrated system. (EE GG 4.59.13)**

Commentary: By meeting this target and achieving a 72 percent overall efficient combined heat and power system, the Distributed Energy Resources program has exceeded their long term measure of a 70 percent efficient integrated system. This contributes towards the market adoption of cost competitive integrated distributed thermal energy technologies in businesses and industry, which increases the efficiency of electricity use, improves electricity reliability, and reduces environmental impacts.

Documentation: Quarterly contractor reports and final report.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Industrial Technologies Partner with our most energy-intensive industries in strategic planning and energy-specific Research, Development & Demonstration (RD&D) to develop the technologies needed to use energy efficiently in their industrial processes and cost-effectively generate much of the energy they consume. The result of these activities will save feedstock and process energy, create domestic supply, improve the environmental performance of industry, and help America's economic competitiveness. (EE GG 4.60)

Commentary: Three new industrial energy efficiency technologies were commercialized and 2084 additional energy-intensive U.S. plants are applying EERE technologies and services to save energy. The production improvements and direct reduction in both total industrial energy use and the use of fossil fuels contributes to the Administration goal of an 18 percent reduction between 2002 and 2012 in the greenhouse gas intensity, or total greenhouse gas emissions per unit of the Gross Domestic Product of the U.S. economy.

FY 2005 Annual Targets

G **Contribute proportionately to EERE's corporate goal of reducing corporate and program adjusted uncosted obligated balances to a range of 20-25 percent by reducing program annual adjusted uncosteds by 10 percent in 2005 relative to the program FY 2004 end of year adjusted uncosted baseline ($40,741K) until the target range is met. (EE GG 4.60.10)**

Commentary: Meeting this target to reduce the Industrial Technologies Program's adjusted uncosted obligated balances to an appropriate level of 20-25 percent on an annual basis ensures enough available funding to avoid disruptions to the program's planned activities, while ensuring that the program's activities are contractually obligated and carried out in a timely manner. This helps ensure that the program is making progress to develop the technologies needed to assist industry to use energy efficiently in their processes and cost effectively generate much of the energy they consume.

Documentation: DOE STARS Financial Database System Second September 30 Adjustment (10/13/2005).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Commercialize 3 new technologies in partnership with the most energy-intensive industries. (EE GG 4.60.11)**

Commentary: The three new technologies commercialized to achieve this goal were "High Luminosity Low NOx Burner" for high heat transfer to glass in glass melters, "Pressurized Ozone/Ultrafiltration Membrane System" for removing total dissolved solids from paper mill water, and the "Ultra-Low NOx Premixed Industrial Burner" used for industrial process heaters, industrial baking and drying ovens. The development of these new technologies within the most energy-intensive industries results in more efficient use of energy, improves the environmental performance of these industries, and increases America's economic competitiveness.

Documentation: Monthly report from PNNL.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Industrial Technologies (con't)

G **Achieve an additional 200 (leading to a cumulative 7000) energy intensive U.S. plants applying EERE technologies and services. (EE 4.60.12)**

Commentary: With the accomplishment of this target, there are now over 12,000 total unique plants applying energy technologies which help to reduce emissions and increase energy efficiency and productivity. The overall result of this effort will save feedstock and process energy, improve the environmental performance of these industries, and help maintain America's economic competitiveness.

Documentation: Lawrence Berkeley National Laboratory and Project Performance Corporation reports.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	Y	Y	Y

Program Goal: Develop New Nuclear Generation Technologies Develop new nuclear generation technologies that foster the diversity of the domestic energy supply through public-private partnerships that are aimed in the near-term (2014) at the deployment of advanced, proliferation-resistant light water reactor and fuel cycle technologies and in the longer-term (2025) at the development and deployment of next-generation advanced reactors and fuel cycles. (NE GG 4.14)

Commentary: For the near-term goal of lowering the risks associated with obtaining the licenses to build and operate the next nuclear power plant in the U.S., the process has moved forward by awarding two projects to conduct a detailed evaluation of both obtaining a Construction and Operating License and building an advanced light water reactor. For the longer-term goal of developing and deploying next-generation advanced reactors, the program continues to conduct research and development on a variety of thermal and fast reactors. In addition, the Department is developing technologies to enable hydrogen generation using nuclear power in support of the President's Hydrogen Initiative. Finally, completion of the design documents for the Advanced Fuel Cycle Initiative experimental test equipment enables construction in FY 2006 which will be used in FY 2007 for progress toward qualification of fuel for the very high temperature reactor.

FY 2005 Annual Targets

G **Achieve cumulative variance of less than 10 percent from each of the cost and schedule baselines for the Advanced Fuel Cycle, Generation IV Nuclear Energy Systems and Nuclear Hydrogen Initiatives. (NE GG 4.14.01)**

Commentary: Overall cumulative year-to-date (October through August) cost variance is +2.76 percent (cost underrun); schedule variance is -6.23 percent (behind schedule). Monitoring of cost and schedule performance against established baselines ensures program managers are achieving the desired program results consistent with the budget execution strategy and provides an early identification of possible problems in program execution.

Documentation: Earned Value Reports through August and Monthly Reports for December through August.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Issue project implementation plans for two Construction and Operating Licensing (COL) Demonstration Projects. (NE GG 4.14.02)**

Commentary: The project implementation plans for the Dominion and NuStart Construction and Operating Licensing Demonstration Projects-comprised of the DOE Interface and Oversight Agreements and the Project Execution Plans-establish the project management controls to ensure proper program execution consistent with the spirit and requirements of DOE Order 413.3.

Documentation: DOE Interface and Oversight Agreements, including Project Execution Plans, for the two Construction and Operating Licensing demonstration projects.

Related Prior Year Target Performance: FY 2004: G FY 2003: Y FY 2002: G

Program Goal: Develop New Nuclear Generation Technologies (con't)

G **Issue the final design documents for the fuel capsule, test train, fission product monitoring system, and control system for the fuel irradiation shakedown test (AGR-1). (NE GG 4.14.03)**

Commentary: These designs describe the test equipment that will be constructed and tested in FY 2006 for the purpose of validating our ability to conduct and monitor fuel performance tests in the Advanced Test Reactor in Idaho. Meeting this target is a critical step in achieving the overall program objective of developing and qualifying particle fuels for use in Generation IV advanced gas reactor systems.

Documentation: AGR-1 Final Design Documentation (Idaho National Laboratory), Final Issue, August 26, 2005.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **G** FY 2002: **G**

G **Issue conceptual design documents for the thermochemical and high-temperature electrolysis pilot scale experiments. (NE GG 4.14.04)**

Commentary: These design documents constitute the current level of knowledge for pilot-scale experiments, identifying the gaps in knowledge that the lab-scale experiments planned for FY 2007 will address. Completion of this milestone supports the long-term objective of developing hydrogen production technology as described in the President's Hydrogen Initiative.

Documentation: Report entitled "Conceptual Design for a 500 kW Sulfur-Iodine Thermochemical Cycle Pilot-Scale Experiment" and report entitled "Conceptual Design Documentation for High-Temperature Electrolysis Pilot-Scale Experiment at 200 kW."

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Issue preliminary report on the post-irradiation examination (PIE) of actinide -bearing metal and nitride transmutation fuels irradiated in the Advanced Test Reactor. (NE GG 4.14.05)**

Commentary: The Post Irradiation Examinations (PIE) on advanced transmutation metal and nitride fuels reported in the September 29 preliminary report are key to continued irradiations to higher burnups and burnups in true fast reactors. This milestone is a critical step to achieving the program objective of developing and qualifying transmutation fuels for use in Generation IV fast reactors.

Documentation: September 2005 Technical Report

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **Y**

Program Goal: Develop New Nuclear Generation Technologies (con't)

G	**Conduct laboratory-scale test of group actinide separation process (plutonium, neptunium, americium and curium extracted together) with actual light water reactor (LWR) spent fuel and report preliminary results. (NE GG 4.14.06)**

Commentary: These preliminary results indicate that group actinide separation is a viable technology. Completing this step is critical to development of an optional process for separating light water reactor fuel in a proliferation-resistant manner.

Documentation: Preliminary results in letter report were issued to DOE/NE-20 by Argonne National Laboratory on September 30, 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	Y	G

Program Goal: National Nuclear Infrastructure Maintain and enhance the national nuclear infrastructure to meet the Nation's energy, environmental, medical research, space exploration and national security needs. (NE GG 4.17)

Commentary: By maintaining the planned cost and schedules for unique Departmental facilities, the Department supported advanced nuclear energy research and the growing demand for isotopes used in medicine, scientific research and homeland security, provided radioisotope power systems for space exploration and national security, and ensured the long term future of the domestic nuclear fuel supply.

FY 2005 Annual Targets

G	**Consistent with safe operations, achieve cumulative variance of less than 10 percent from each of the cost and schedule baselines for the Radiological Facilities Management and Idaho Facilities Management programs. (NE GG 4.17.01)**

Commentary: Overall cumulative year-to-date for Radiological Facilities Management and Idaho Facilities Management (October through August) cost variance is +5.0 percent (cost underrun) and schedule variance is -0.7 percent (behind schedule). Efficient execution of these programs ensures that the Department's critical nuclear infrastructure, required for advanced nuclear energy technology research and development, is available to support national priorities.

Documentation: Program Baseline Documentation, Monthly Reports

Related Prior Year Target Performance: FY 2004: G FY 2003: Y FY 2002: G

Program Goal: National Nuclear Infrastructure (con't)

G **Complete FY 2005 actions at the Idaho Site required to implement the May 2003 Design Basis Threat (DBT) as defined in the Program Management Plan that remain consistent with the requirements of the October 2004 DBT. (NE GG 4.17.02)**

Commentary: The completion of these actions moves the Department towards full implementation of the 2003 Design Basis Threat by the end of FY 2006.

Documentation: Approved 2004 DBT Implementation Plan dated July 21, 2005

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Enhance the Nation's Nuclear Education Infrastructure Enable, by 2015, the Nation's nuclear engineering universities to support a stable national undergraduate enrollment of approximately 1,500 students to meet the Nation's need for trained nuclear scientists and engineers. (NE GG 4.63)

Commentary: The Department continued to provide significant support to the education of the next generation of nuclear engineers and scientists by awarding over 250 fellowships, scholarships, and industry matching grants, as well as, funding numerous equipment and instrumentation upgrades at the university reactors throughout the country. The Department's involvement in these programs continues to serve as the primary catalyst for industry participation in these programs.

FY 2005 Annual Targets

G **Issue funding to the six existing Innovations in Nuclear Infrastructure and Education consortia; provide fuel to University Research Reactors; issue funding to 20 to 25 DOE/Industry Matching Grants, 20 equipment and instrumentation upgrades, and 50 Nuclear Engineering Education Research grants; and provide 25 fellowships and 75 scholarships. (NE GG 4.63.01)**

Commentary: Issued funding to the six existing Innovations in Nuclear Infrastructure and Education consortia; provided fuel to the University Research Reactors; issued 25 DOE/Industry matching grants; funded 21 equipment and instrumentation upgrades; funded 50 Nuclear Engineering Education Research grants; and provided 29 fellowships and 81 scholarships. Efficient execution of this program ensures that the intellectual capital, required to ensure the ongoing availability of nuclear power as part of the diversity of the Nation's energy mix, is available to support the Nation's nuclear research infrastructure.

Documentation: Signed funding letters; Notice of Financial Assistance Award (NFAA) instruments.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	Y	G	Y

Program Goal: Near Zero Atmospheric Emissions Coal-Based Electricity and Hydrogen Production Create public/private partnerships to develop technology to ensure continued electricity generation and hydrogen production from the extensive U.S. fossil fuel resource, including control technologies to permit reasonable-cost compliance with emerging regulations, and ultimately, by 2015, near zero atmospheric emission plants (including carbon) that are fuel-flexible, and capable of multi-product output and energy efficiencies over 60 percent with coal. (FE GG 4.55)

Commentary: Created public/private partnerships to provide technology to ensure continued electricity production from the extensive U.S. fossil fuel resource, including control technologies to permit reasonable-cost compliance with emerging regulations, and ultimately, by 2015, near zero atmospheric emission plants (including carbon) that are fuel-flexible, and capable of multi-product output and efficiencies over 60 percent with coal and 75 percent with natural gas.

FY 2005 Annual Targets

G **Develop field performance and cost data for emission control technologies and establish baseline for emissions transport from coal-fired boilers in support of proposed mercury and air quality regulations. (FE GG 4.55.01)**

Commentary: Establishing baseline cost and performance data for advance emissions control technologies is a critical step toward the commercialization of technologies with the potential to reduce: Mercury by 50 - 70 percent at 70 percent of the 2003 cost of $50,000-$70,000/lb of mercury; NOx to less than 0.15 lb/mmBtu at ¾ cost of SCR, currently $80-$100/Kw; PM2.5 by 99.99 percent for less than $50-$70/Kw; and acid gases by 95 percent.

Documentation: The subject report titled "Laboratory Methods for the Evaluation of Potential Release of Mercury from Coal Utilization By-Products" was delivered to NETL on July 21, 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Begin construction of slip stream test units, test planning, and testing of advanced gas cleanup concepts using real coal-derived synthesis gas. (FE GG 4.55.02)**

Commentary: The Gasification Technologies program moved ultra-clean cleanup, including economical and efficient sulfur removal and/or multi-contaminant cleanup, a significant step closer to commercialization, eventually leading to capital cost reductions of $60-$80.kWe and efficiency improvements of >1 efficiency points. The turbine technology area of Advanced Power showed progress towards the contribution of 2 - 3 percentage points improvement in combined cycle turbine efficiency.

Documentation: September 2005 Monthly Report

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: NA

Program Goal: Near Zero Emissions Coal-Based Electricity and Hydrogen Production (con't)

G **Complete at least two pilot scale tests on emerging advanced capture technologies related to oxyfuel, sorbents, membranes and hydrates. (FE GG 4.55.03)**

Commentary: The program completed two pilot scale tests on emerging advanced capture technologies related to oxyfuel, sorbents, membranes and hydrates. Demonstration of technologies at a pilot plant scale will lead to a reduction in the cost of carbon separation and capture from new coal-based power systems by 75 percent compared to current systems ($200/tonne carbon in year 2000).

Documentation: Quarterly reports issued July 29, 2004 (prior experimentation); January 31, 2005, and July 2005 (current efforts).

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Begin prototype validation of technical requirements for low-cost State Energy Conservation Alliance (SECA) fuel cell systems. Test at least one prototype capable of achieving SECA cost and efficiency Phase I goals. (FE GG 4.55.04)**

Commentary: General Electric initiated and completed validation testing of their Phase I prototype and met the SECA minimum requirements with a cost of $724/kW ($800/kW goal) and an efficiency of 38 percent (35 to 55 percent goal). Validation that SECA Prototype systems are capable of achieving Phase I goals ensures that the program is on track for the ultimate program goal of modular fuel cells with 10-fold cost reduction ($400/kW) at 40-60 percent efficiency.

Documentation: Details and presentations for all of the SECA Industry Teams are available on the SECA website (http://www.seca.doe.gov/), especially the Fuel Cell Annual Report 2005 and Fossil Energy Techlines.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Under SECA CTP, validate one new sealing concept; achieve 20 percent improvement in metallic interconnect performance relative to FY04 baseline; and achieve 20 percent sulfur tolerance relative to FY 2004 baseline. (FE GG 4.55.05)**

Commentary: A hybrid mica-Ag composite sealing concept was validated and showed an 80 percent percent improvement relative to the FY 2004 baseline leakage target. Interconnect development has improved 66 percent (reduced to 1/3) for 500 hours duration to an area specific resistance (ASR) of 13 mohm-cm2. Anode development has improved sulfur tolerance 160 percent to 26ppm H2S. The latter two figures are far in excess of the 20 percent improvement in the annual target, and all three provide competitive solid oxide fuel cell concepts and focused R&D to meet SECA cost reduction and performance goals. Validation of improved sealing and interconnect performance increases the robustness of distributed generation and thereby lower vulnerability of the electricity grid by introducing prototypes. This is critical to the ultimate success of the SECA program.

Documentation: Details and presentations are available on the SECA website (http://www.seca.doe.gov), especially the Fuel Cell Annual Report 2005.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Program Goal: Near Zero Emissions Coal-Based Electricity and Hydrogen Production (con't)

G **Initiate 100 percent of the active industrial projects selected under the first round of the competitive Clean Coal Power Initiative (CCPI) solicitation and make project selections from the second round CCPI solicitation. (FE GG 4.55.06)**

Commentary: All active projects selected under the CCPI Round 1 solicitation were initiated; project selections for CCPI Round 2 were made in October 2004. The CCPI will develop advanced coal-based power generation technologies that: improve efficiency from 2002 baseline by 40-50 percent by 2010, with environmental and economic performance capable of achieving 90 percent Hg removal at a cost of 70 percent of current technology by 2010, 0.15 lb/MMBtu NOx at 75 percent of the cost of current technology (selective catalytic reactors), and lower capital costs for gasification technologies from $1,200 per kilowatt of capacity; co-produce heat, fuels, chemicals or other useful byproducts; and, provide a deployment-ready suite of advanced technologies that can produce substantial near-, mid-, and long-range economic and environmental public benefits.

Documentation: Copies of the cooperative agreements are available at NETL. Project selections for CCPI Round 2 were made in October 2004 and public notification was posted on the NETL website (www.netl.doe.gov) the same month.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Complete analysis and continue compilation of data derived from hydrogen separations in a format that can be used as the basis for developing industry standards needed to design and operate commercial-scale separation technology. (FE GG 4.55.07)**

Commentary: The data obtained during FY 2005, and other on-going membrane research, was sufficient to update the Hydrogen-from-Coal RD&D Plan's technical targets for membrane technologies. Further, based on lack of progress made in developing dense ceramic membranes, it was decided to not pursue further development on that specific type of membrane. All other RD&D technical targets were also revised, based on progress made in storage and utililization and programmatic decisions to incorporate additional technologies in the Program. Developing industry standards for the design and operation of commercial-scale separation technology is a critical first step in the development of modules capable of co-producing hydrogen from coal at $30/barrel crude oil equivalent (no incentives or tax credits) when integrated with advanced coal power systems.

Documentation: Document available upon request from NETL.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Natural Gas Technologies Provide technology and policy options capable of ensuring abundant, reliable, and environmentally sound gas supplies. (FE GG 4.56)

Commentary: The Natural Gas program has provided valuable new hardware, tools, data and research information that has helped the natural gas industry explore, devebp and produce more natural gas. New technology approaches developed under the DOE/NETL program will provide a higher probability of success in the finding and producing of U.S. natural gas resources.

FY 2005 Annual Targets

G **Complete four of the prototype near-term products or field tests from the following critical technology areas: advanced drilling, stripper-well enhancement, and gas storage. (FE GG 4.56.01)**

Commentary: Completed four prototype near-term products and field tests from the critical technology areas of advanced drilling and stripper-well enhancement. Several technologies were transferred to industry which benefit the stripper well enhancement and advanced drilling areas. Upon transferring of these technologies to industry, they may substantially reduce costs or increase efficiency in gas exploration and production.

Documentation: Milestones recorded in ProMIS

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Conduct an ocean expedition to retrieve gas hydrate samples for laboratory analysis. (FE GG 4.56.02)**

Commentary: These efforts of retrieving gas hydrates were completed, representing the first time subsurface hydrate samples have been collected in the Gulf of Mexico using the specially instrumented pressure vessels developed under this program. These efforts of retrieving gas hydrate samples have provided valuable information and insight into the physical and production properties of producing natural gas from gas hydrates. Experimental results are beginning to provide unique data for numerical modeling the impact of core recovery on hydrate-bearing sediments. This advanced information will allow for a higher probability of success in providing additional gas supply from gas hydrates.

Documentation: ChevronTexaco GOM Gas Hydrate JIP Drilling Program Downhole Logging Program Report.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	Y	G

Program Goal: Oil Technologies Enhance U.S. energy security by managing and funding oil exploration and production (E&P) research and policy which results in development of domestic oil resources in an environmentally sound and safe manner. (FE GG 4.57)

Commentary: The long term goal of increasing economic recoverable resource base is supported by the successful field applications of the horizontal well projects, the Delaware sandstone work, initiation of the microhole applications, the 3-D seismic, new completion techniques, and produced gas handling.

FY 2005 Annual Targets

G **Develop technologies through four projects which will contribute to increasing domestic oil supplies in an environmentally friendly manner. (FE GG 4.57.01)**

Commentary: Technical success was achieved in 12 projects. This exceeds the expected success of four projects. The successful field applications support the goal of increasing economic recoverable resource base through horizontal well projects, the Delaware sandstone work, initiation of the microhole applications, the 3-D seismic, new completion techniques, and produced gas handling.

Documentation: Milestones recorded in ProMIS

Related Prior Year Target Performance: FY 2004: G FY 2003: Y FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	Y	G

Program Goal: Petroleum Reserves Maintain operational readiness of the Strategic Petroleum Reserve (SPR) to drawdown at a sustained rate of 4.4 million barrels per day for 90 days, within 15 days notice by the President. Maintain a 2 million barrel reserve of home heating oil in the U.S. Northeast. Utilize Naval Petroleum Reserve (NPR) #3 as a testing and demonstration field for the Rocky Mountain Oil field Testing Center's ongoing research. Continue closeout and equity finalization activities related to NPR #1 and finalize settlement to the State of California with respect to its claim to be "school lands". (FE GG 4.58)

Commentary: During FY 2005, SPR maintained operational readiness through Quarterly Readiness Reviews and a triennial drawdown exercise. The Northeast Home Heating Oil Reserve continues to maintain a 2 million barrel reserve, which is verified monthly in terms quality and quantity. Research at Naval Petroleum Reserve #3 contributed to technologies that provide the opportunity to incrementally increase the domestic petroleum reserves. The equity decision related to the Naval Petroleum Reserve #1 Stevens Zone is being challenged by Chevron. When equity is finalized on all four zones, any remaining amount due to the State of California for "school lands" can be determined.

FY 2005 Annual Targets

G **Achieve an end of year crude oil inventory equal to 690 million barrels in SPR. (FE GG 4.58.01)**

Commentary: After responding to the President's direction to drawdown oil from SPR following the devestation of Hurricane Katrina, the Reserve's inventory at year-end was 693.2 MMB.

Documentation: Crude Oil Movement and Events Tracking System (COMETS)

Related Prior Year Target Performance: FY 2004: G FY 2003: Y FY 2002: G

FY 05	FY 04	FY 03	FY 02
Y	Y	G	Y

Program Goal: Electric Transmission and Distribution Lead the national effort to modernize and expand the Nation's electricity delivery system to ensure a more reliable and robust electricity supply, as well as economic and national security. (OE GG 4.12)

Commentary: Although the office failed to achieve two of its annual performance targets, both failures were due to temporary, short-term delays that did not impact significantly the progress toward the program goal. During FY 2005 the Office of Electric Transmission and Distribution was reorganized and expanded to include the Office of Energy Assurance. Through the expansion and new integrated mission, the office has made noteworthy progress in improving the reliability of the Nation's electric grid with a real time, wide area measurement system for the Eastern Interconnection, progress on high temperature superconductivity cable and battery systems for storage, the successful demonstration of load management technologies, as well as emergency response and energy restoration assistance in the aftermath of hurricanes Katrina and Rita.

FY 2005 Annual Targets

R **Complete the manufacture a 200m superconducting cable for American Electric Power (AEP). (OE GG 4.12.01)**

Commentary: All preparations were made on schedule, however due to a manufacturing delay the superconducting cable was not completed. The successful development of high temperature superconducting cable will improve the efficiency and reliability of electricity transmission, such as reducing costs of increasing power delivery and relieving bottlenecks in transmission and distribution networks.

Plan of Action: The manufacturer has committed to completing the cable by October 28th, 2005.

Documentation: Project Gantt chart maintained by Field Manager Paul Bakke, Golden Field Office.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Install four additional data concentrators at four different data archiving and analysis locations, achieving a prototype wide area measurement system in the Nation's Eastern Interconnect consisting of six fully functioning data archiving and analysis locations installed at six different utilities. (OE GG 4.12.02)**

Commentary: With the successful installation of four additional data concentrators at four different data archiving and analysis locations, DOE has helped lead the efforts to make the Nation's electric grid more reliable. These efforts result in improved real time monitoring of the flow of electricity and the information that would help operators prevent or mitigate serious problems that might result in blackouts.

Documentation: Pacific Northwest National Laboratory September 2005 Report for the Transmission Reliability Program.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Electric Transmission and Distribution (con't)

R **Complete the manufacture of and factory testing on a 2MW / 2MWh zinc-bromine battery (ZBB) system (consisting of four 500kW / 500kWh units) for supplying extra power during peak load conditions at a utility substation. (OE GG 4.12.03)**

Commentary: Although manufacture of the first 500kW/500kWh unit is complete at the ZBB facility in Wisconsin, factory testing was not completed. Delays are due to technical problems in component supply and a change in the main funding partner's (California Energy Commission) delivery schedule. Successful development of electric storage technologies can significantly reduce transmission system congestions, help manage peak loads, make renewable electricity sources more dispatchable, and increase the reliability of the overall electric grid.

Plan of Action: Testing of the complete system is planned to be finished at the Wisconsin factory by May 2006 before it will be delivered to the testing facility in San Ramon, CA. While this delays installation, it will improve prospects for the success of the project.

Documentation: California Energy Commission – contract modification dated May 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Reduce by 10 percent the total time required by OE to complete its FY 2006 CFO, OMB and Congressional budget submissions as compared to its comparable FY 2005 budget submissions. (OE GG 4.12.04)**

Commentary: The program reduced by 10 percent the total time required by OE to complete its FY 2006 CFO, OMB and Congressional budget submissions as compared to its comparable FY 2005 budget submissions. The reduction in total time spent on completing the FY 2006 budget allows for a timely submission and redirection of time for other office projects.

Documentation: FY 2006 Budget Submissions and a log of man hours worked.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Complete field hardware installation at a cumulative total of at least 100 commercial, industrial and/or municipal customers participating in the demand response and load conservation network in Connecticut, and reduce peak demand (kilo watt hours) in real time by 5-8 percent on average (as compared to non-curtailed kilowatt hour consumption) for all participating customers. (OE GG 4.12.05)**

Commentary: With the achievement of the target and demonstration of real-time wireless electricity monitoring and load management technologies in commercial, industrial and municipal facilities to curtail peak demand and reduce unnecessary kilowatt hour consumption, the Department has shown the value of integrating demand resources into the overall electric utility system to improve overall system reliability, to reduce wholesale electric generation price volatility and to reduce congestion costs in energy constrained areas.

Documentation: Preliminary Connecticut Power Technologies Project Quarterly Technical Report, July 28, 2005.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	G	Y

Program Goal: Southeastern Power Administration Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard. (PMA GG 4.51)

Commentary: Achievement of associated annual targets related to reliability, repayment of Federal investment and safety indicate that the program continues to meet its goal of efficiently and effectively marketing and delivery Federal hydropower, providing significant economic benefits to the affected region.

FY 2005 Annual Targets

G **Attain acceptable North American Electric Reliability Council (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support system frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90). (PMA GG 4.51.01)**

Commentary: For FY 2005, Southeastern achieved annual average CPS 1 and 2 measures of 207.98 and 99.85, respectively. Southeastern also achieved pass on all 6 monthly standards for 12 months. By achieving control performance standards within acceptable NERC standards Southeastern contributed to interconnected steady state frequency by balancing demand and supply in real time. Balanced supply and demand ensures safe and stable electric power grid operation.

Documentation: CPS 1 and CPS 2 reported to Southeastern Electricity Reliability Council Web Portal on Form P1T1.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Provide reliable service to customers each year by maintaining full compliance with North American Electric Reliability Council (NERC) and Southeastern Electric Reliability Council (SERC) operating policies and standards as a foundation for its operations reliability program. (PMA GG 4.51.02)**

Commentary: Maintaining full compliance with NERC and SERC operating policies demonstrates that Southeastern provides reliable customer service in accordance with industry standards. Each reliability standard supports one or more reliability principles, ensuring reliable system operation.

Documentation: SERC/NERC Compliance Reported to SERC Web Portal: Disturbance Control (Form P1T2); Compliance Issues (Form P2T1); Operator Training (Form P8T2).

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Southeastern Power Administration (con't)

G **Repay 1 percent of the Federal investment each year. (PMA GG 4.51.03)**

Commentary: Preliminary results indicate that Southeastern will meet its FY 2005 planned repayment of $37 million (i.e., 1 percent of the Federal investment). On an annual basis, Southeastern repays the Federal debt and operating and maintenance expenses for the specific and joint costs allocated to power for 23 Federal water projects in the southeastern U.S. As a result of higher than expected rainfall in the third quarter of FY 2005, repayment is expected to be greater than the planned amount.

Documentation: Power Repayment Studies, Annual Report & Audited Financial Statements

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **R**

G **Provide $628 million in economic benefits to the region from the sale of hydroelectric power. (PMA GG 4.51.04)**

Commentary: Higher than expected rainfall in the third quarter of FY 2005 resulted in the greater than expected benefits. Economic benefits were approximately $707 million in FY 2005, which is greater than the forecast benefit of $628 million. Economic benefits are attributed to no fuel expenses and efficient dispatch into the power grid. Power values are based on operating parameters and the operating costs of alternative sources of power.

Documentation: Power Values: Corps of Engineers Hydropower Design Center, Portland, Oregon. Power Production: Corps of Engineers generating data from district offices.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	Y	Y

Program Goal: Southwestern Power Administration Customers benefit from Federal power by purchasing and receiving low cost, reliable electricity from Federal multipurpose hydroelectric dams at cost-based rates that produce revenues sufficient to repay all power costs to the American taxpayers. (PMA GG 4.52)

Commentary: Achievement of associated annual targets related to reliability, repayment of the Federal investment, control of Southwestern's annual Operations and Maintenance costs, and economic benefits indicate that the program continues to meet its goal of efficiently and effectively marketing and delivering Federal hydropower.

FY 2005 Annual Targets

G **Meet industry averages for system reliability (CPS1: 171.64 and CPS2: 96.71). At a minimum, attain acceptable North American Electric Reliability Council (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support system frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90). (PMA GG 4.52.01)**

Commentary: Southwestern's average annual results for FY 2005 are 186.74 for CPS 1 and 99.40 for CPS 2. Southwestern achieved 6 out of 6 control compliance ratings. Achieving this target reflects Southwestern's ability to maintain acceptable power system operation for control area performance, thereby operating the power system efficiently and effectively.

Documentation: Monthly Resources Subcommittee CPS Reports (www.NERC.com/~filez/cpc.html)

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Provide reliable service to customers annually under normal operations, by not allowing system voltage to fall below 95 percent of nominal (e.g. 161kV) for more than 30 minutes during any preventable condition. (PMA GG 4.52.02)**

Commentary: During FY 2005, Southwestern did not incur any violations where system voltage fell below 95 percent of nominal for more than 30 minutes of preventable condition. Achieving this target reflects Southwestern's ability to provide reliable service to customers each year, thereby maintaining power system reliability.

Documentation: Southwest Power Pool Outages Database, Southwestern's Official Supervisory Control And Data Acquisition (SCADA) Operational Logs.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Southwestern Power Administration (con't)

G **Repay the Federal Investment within the required repayment period. (PMA GG 4.52.03)**

Commentary: Southwestern has achieved 100 percent, or $1,333,734, of required repayment of the Federal investment for FY 2005. Repayment of debt is a sound business practice in direct support of the program goal.

Documentation: Power Repayment Studies, Annual Report, Audited Financial Statements

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **Y** FY 2002: **G**

G **Provide power at the lowest possible cost by keeping average operation and maintenance cost per kilowatt-hour below the national average for hydropower. (PMA GG 4.52.04)**

Commentary: For FY 2005, Southwestern achieved $0.0109 cost per kilowatt-hour, which is less than the national industry average of $0.0126. Achieving this target reflects Southwestern's ability to control annual Operations and Maintenance costs, thereby providing power at the lowest possible cost.

Documentation: Southwestern's Financial Management System (Oracle Financials), U.S. Army Corps of Engineers Financial Data Reporting, Surveyed Utilities Financial Reporting to FERC.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Provide $457 million in economic benefits to the region from the sale of hydroelectric power (under average water conditions). (PMA GG 4.52.05)**

Commentary: During FY 2005, Southwestern achieved 106.8 percent, or $488 million, of the $457 million annual goal. Achieving this target reflects Southwestern's effort to provide economic benefits within its marketing area through the delivery of Federal hydropower, thereby advancing the President's commitment to provide both renewable and affordable energy to the nation, while reducing the nation's use of conventional fossil fueled energy.

Documentation: U.S. Army Corps of Engineers' (Corps) Greers Ferry Lake Reallocation Study (September 1997), Corps Hydropower Analysis Center Data, Corps Power Plant Reports, Southwestern's Annual Report, Southwestern's Marketing Plan.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Western Area Power Administration Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard. (PMA GG 4.53)

Commentary: Achievement of associated annual targets related to reliability, repayment of Federal investment and safety indicate that the program continues to meet its goal of efficiently and effectively marketing and delivering Federal hydropower.

FY 2005 Annual Targets

G **Attain acceptable North American Electric Reliability Council (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support sys tem frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90). (PMA GG 4.53.01)**

Commentary: For FY 2005, Western's CPS-1 and CPS-2 averages were 183.8 and 98.17, respectively. Achieving this target reflects Western's ability to maintain acceptable power system operation for control area performance, thereby operating the power system efficiently and effectively.

Documentation: Regional monthly compliance results are published on the NERC website (http://www.nerc.com/~filez/cpc.html)

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Limit accountable customer and/or transmission element outages to not exceed the average number of outages for the past five years. (PMA GG 4.53.02)**

Commentary: Cumulative FY 2005 outages of 23 were within target, thus reliable customer service has been achieved.

Documentation: Performance standard and criteria for determining accountability developed internally as part of the Western Bonus Goal program (self-imposed reporting standard).

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Maintain ratio of unanticipated repair work hours to total maintenance hours at 16 percent or less. (PMA GG 4.53.03)**

Commentary: Western's ratio of 7.1 percent is within the FY 2005 target of 16 percent or less. Thus, reliable customer service was achieved.

Documentation: Unanticipated repair work percentage is calculated using the "corrective and emergency maintenance" hours divided by the total maintenance hours recorded in Western's automated maintenance management system (MAXIMO).

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Western Area Power Administration (con't)

G **Achieve a recordable accident frequency rate for recordable injuries per 200,000 hours worked of not greater than 3.3, or the latest published Bureau of Labor Statistics' industry rate, whichever is lower. (PMA GG 4.53.04)**

Commentary: Western's FY 2005 rate of 1.6 is below the annual targeted frequency rate of 3.3. Safety is a sound business practice toward achieving the program goal.

Documentation: Information is reported to DOE's Environment, Safety & Health Program Manager for Reporting Criteria on DOE Form 5484.4, Tabulation of Work Hours and Vehicle Usage & Property Valuation, and WAPA Form 5484.1, Individual Accident/Incident Report.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Ensure unpaid Federal Investment (UI) is equal to or less than the allowable unpaid investment (AUI). (PMA GG 4.53.05)**

Commentary: Collective repayment data for Western projects indicates that the ratio of UI to AUI is equal to or less than 1.00. Debt repayment is a sound business practice toward achieving the program goal.

Documentation: Long-term cumulative repayment performance is assessed twice annually (through project power repayment studies) as part of the power rate-setting process.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Bonneville Power Administration Ensure Federal hydropower is marketed and delivered while passing the North American Electric Reliability Council's (NERC) Control Compliance Ratings, meeting planned repayment targets, and achieving a recordable accident frequency rate at or below our safety performance standard. (PMA GG 4.54)

Commentary: Achieved annual reliability, repayment, safety, and heavy load hour availability targets indicating that the program continues to meet its goal of efficiently and effectively marketing and delivering Federal hydropower.

FY 2005 Annual Targets

G **Attain acceptable North American Electric Reliability Council (NERC) ratings for the following NERC Control Performance Standards (CPS) measuring the balance between power generation and load: 1) CPS1 which measures generation/load balance and support system frequency on one minute intervals (rating >100); and 2) CPS2 which limits any imbalance magnitude to acceptable levels (rating >90). (PMA GG 4.54.01)**

Commentary: Bonneville achieved pass ratings for CPS-1 in twelve of twelve months for an annual average of 196.6 percent and above the required threshold of 100 percent; and pass ratings for CPS-2 in eleven of twelve months for an annual average of 93.9 percent and above the required threshold of 90 percent. Meeting this performance target demonstrates Bonneville's continued focus on and commitment to delivering power reliably.

Documentation: Quarterly Findings Memo from the Bonneville Chief Operating Officer to the Bonneville Administrator.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Meet planned annual repayment of principal on Federal power investments. (PMA GG 4.54.02)**

Commentary: Bonneville made its annual Treasury payment in full and on time, with a FY 2005 Treasury principal amortization payment of $616 million, which included $303 million of planned principal amortization and $313 million of advanced principal amortization. Cumulative advanced amortization (principal repaid earlier than planned) at the end of FY 2005 totaled $1,459 million. For the 22nd straight year Bonneville has made its annual Treasury payment in full and on time, and meeting this performance target demonstrates Bonneville's commitment to meeting its obligations to U.S. taxpayers.

Documentation: Quarterly Findings Memo from the Bonneville Chief Operating Officer to the Bonneville Administrator.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

Program Goal: Bonneville Power Administration (con't)

G **Achieve a recordable accident frequency rate (RAFR) of no more than 3.3 recordable injuries per 200,000 hours worked or the Bureau of Labor Statistics' industry rate, whichever is lower. (PMA GG 4.54.03)**

Commentary: Bonneville achieved its annual Recordable Accident Frequency Rate (RAFR) target with a RAFR of 2.5. Bonneville continues to strive for reduced injuries through a proactive safety program. Meeting this performance target demonstrates BPA's commitment to maintaining a safe work environment.

Documentation: Quarterly Findings Memo from the Bonneville Chief Operating Officer to the Bonneville Administrator.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve 97 percent heavy load hour availability (HLHA) through efficient performance of Federal hydro-system processes and assets, including joint efforts of BPA, Army Corps of Engineers, and Bureau of Reclamation. (PMA GG 4.54.04)**

Commentary: Bonneville exceeded the 97 percent HLHA target and achieved a 100 percent HLHA result for the year. Meeting this performance target demonstrates Bonneville's commitment to efficiency and to improving the alignment of generation availability with water supply and market demand.

Documentation: Quarterly Findings Memo from the Bonneville Chief Operating Officer to the Bonneville Administrator.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Energy Information Administration (EIA) EIA's information program is relevant, reliable and consistent with changing industry structures, and EIA's products are accurate and timely. (EIA GG 4.61)

Commentary: EIA evaluates its progress toward meeting this goal by monitoring release schedules and customer satisfaction levels, and by conducting internal evaluations of its information accuracy and relevance. Successful completion of its corresponding annual targets indicates that EIA is achieving its program goal of informing sound policymaking, efficient energy markets and public understanding.

FY 2005 Annual Targets

G **Meet release date targets for 85 percent of EIA products. (EIA GG 4.61.01)**

Commentary: The program met release date targets for 90 percent of EIA products. Many energy markets rely on EIA data being available on a schedule, and by meeting these needs, EIA helps to promote efficient energy markets, and, to a lesser extent, sound policymaking and public understanding. Together, these help to promote a diverse supply and delivery of reliable, affordable, and environmentally sound energy, both now and in the future.

Documentation: EIA has selected products to track, covering weekly, monthly, quarterly, and annual products from all major offices, and is tracking the actual release dates.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Ensure 90 percent or more of customers rate themselves in customer surveys as satisfied or very satisfied with the quality of EIA information. (EIA GG 4.61.02)**

Commentary: 90 percent of customers rate themselves in customer surveys as satisfied or very satisfied with the quality of EIA information. EIA believes that the ratings and comments from our customers provide us with important insights into how our information is used, who the customers are, what they are looking for, and areas for future improvements. This feedback helps EIA to continue to provide high-quality and relevant information, which assists in the management of energy in the U.S. both now and in the future.

Documentation: American Customer Satisfaction Index (ASCI)

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

G **Ensure 70 percent of key EIA survey frames will have sufficient industry coverage to produce accurate supply, demand and price statistics. (EIA GG 4.61.03)**

Commentary: 86 percent of key EIA survey frames have sufficient industry coverage to produce accurate supply, demand and price statistics. By providing high-quality energy information, EIA contributes to sound policymaking, public understanding, and efficient energy markets. Providing high-quality data for emerging energy sources and changing usage patterns allows Congress and other branches of the department to accurately assess energy developments.

Documentation: On-going EIA team effort to address best practices for updating and documenting frames, and for providing greater efficiencies in sharing frame information among offices.

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

General Goal 5: Science

General Goal 5: World-Class Scientific Research Capacity

Provide world-class scientific research capacity needed to: ensure the success of Department missions in national and energy security; advance the frontiers of knowledge in physical sciences and areas of biological, medical, environmental, and computational sciences; or provide world-class research facilities for the Nation's science enterprise.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
25	0	2	0

FY 2005 Program Costs ($ in Millions): $3,565

FY05	FY04	FY03	FY02
Y	G	Y	Y

Program Goal: High Energy Physics (HEP) Understand the unification of fundamental particles and forces and the mysterious forms of unseen energy and matter that dominate the universe; search for possible new dimensions of space; and investigate the nature of time itself. (SC GG 5.19)

Commentary: Experiments at HEP accelerators are providing a better understanding of the origin of the universe and the relationship of fundamental forces. By studying the combining of particles and interactions into basic building blocks at high particle energies, we are increasing our knowledge of the forces that control the universe.

FY 2005 Annual Targets

G **Deliver at least 312 inverse picobarns (pb-1) of data to the CDF and D-Zero detectors at the Tevatron. (SC GG 5.19.01)**

Commentary: Delivered 598 pb-1 of data during FY 2005. Achieving this target produces experimental data that advances our knowledge of the nature of fundamental particles and the physical laws that govern matter, energy space and time.

Documentation: http://www-bdnew.fnal.gov/operations/lum/supertable.html This page, "Quarterly Performance Numbers," will list the number of inverse picobarns for each quarter of 2005.

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: G

G **Deliver at least 40 inverse femtobarns (fb-1) of data to the BABAR detector at the Stanford Linear Accelerator (SLAC) B-factory. (SC GG 5.19.02)**

Commentary: Delivered 53.5 fb-1 of data during FY 2005. Achieving this target produces experimental data that advances our knowledge of the nature of fundamental particles and the physical laws that govern matter, energy space and time.

Documentation: http://www.slac.standford.edu/grp/ad/PEPII_Run_Time_Statistics/PEP%20FY2003-5%20totals%20for%20DOE.pdf This page, "SLAC-PEPII Run Statistics," for the BABAR Detector and PEP-II B-factory, records its "data delivery" (in fb-1) and "unscheduled downtime."

Related Prior Year Target Performance: FY 2004: G FY 2003: R FY 2002: G

Program Goal: High Energy Physics (con't)

G **Maintain less than 10 percent cost-weighted mean percentage variances from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. (SC GG 5.19.03)**

Commentary: Annual cost-weighted percentage cost-variance for HEP projects was +2 percent. Annual cost-weighted percentage schedule-variance for HEP projects was -1 percent. Controlling project costs and meeting construction schedules enables the Department to conduct world-class scientific research across a wide-range of disciplines.

Documentation: Derived from Quarterly Project Reports to the Deputy Director for Science for the following projects: Neutrinos at the Main Injector (NuMI/MINOS); U.S. CMS; U.S. ATLAS; U.S. LHC Accelerator; Gamma-ray Large Area Space Telescope (GLAST/LAT).

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

R **Achieve 80 percent average operation time of the scientific user facilities (the Fermilab Tevatron and the Stanford Linear Accelerator (SLAC) B-factory (measured as a percentage of the total scheduled annual operating time). (SC GG 5.19.04)**

Commentary: Average operational time was 73 percent. Fermilab Tevatron operations met its goal, but the Stanford Linear Accelerator Center(SLAC) was shut down in early FY 2005 due to an accident which prevented operation of the B-Factory. This delayed optimal functionality of the facility in delivery of data to researchers.

The SLAC was the site of an unfortunate, yet avoidable, safety accident in October 2004. An electrician received serious burn injuries requiring hospitalization due to an electrical arc flash during installation of a circuit breaker. This incident resulted in a near fatality and immediate suspension of activities at SLAC. The HEP research activities involving SLAC were also frozen. After an extensive review and revision of safety procedures, the facility restarted operations in April 2005.

Action Plan: B-factory is now operational with uptime at an acceptable level; the program will continue facility operations into FY 2006 to meet operational uptime goal for FY 2006.

Documentation: Derived from letters from Lab Directors or designee. Fermi data are reported at http://www-bdnew.fnal.gov/operations/lum/supertable.html. SLAC data are reported at http://www.slac.standford.edu/grp/ad/PEPII_Run_Time_Statistics/PEP%20FY2003-5%20totals%20for%20DOE.pdf

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	G	G	Y

Program Goal: Nuclear Physics (NP) Understand the evolution and structure of nuclear matter, from the smallest building blocks, quarks and gluons; to the elements in the universe created by stars; to unique isotopes created in the laboratory that exist at the limits of stability, possessing radically different properties from known matter. (SC GG 5.20)

Commentary: Experiments at Nuclear Physics Accelerator User Facilities substantially advance our understanding of nuclear matter and the early universe. They help the United States maintain a leading role in nuclear physics research, which has been central to the development of various technologies in the fields of nuclear energy, nuclear medicine, and national security. The highly trained scientific and technical personnel involved in fundamental nuclear physics are a valuable human resource for many applied fields.

FY 2005 Annual Targets

G **Record at least 20 and 2.4 billion events at the Argonne Tandem Linac Accelerator System (ATLAS) and Holifield Radioactive Ion Beam Facilities (HRIBF), respectively. (SC GG 5.20.01)**

Commentary: Achieved 28.1 billion events at ATLAS and 3.76 billion events at HRIBF during FY 2005. Achieving these high recording rates is accelerating scientific research in the areas of nuclear properties. Scientists accelerate and collide radioactive and stable beams on targets to investigate new regions of nuclear structure, studying interactions in nuclear matter like those occurring in neutron stars, and determining the reactions that created the nuclei of the chemical elements inside stars and supernovae.

Documentation: Official correspondence from Argonne National Laboratory and Oak Ridge National Laboratory management to NP Office reporting and certifying accuracy of recorded number of events at ATLAS and HRIBF.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Record at least 2.3, 7.7, and 2.2 billion events through experiments in Hall A, Hall B, and Hall C, respectively, at the Continuous Electron Beam Accelerator Facility (CEBAF). (SC GG 5.20.02)**

Commentary: Recorded 2.83 billion events in Hall A; 8.06 billion events in Hall B; and 2.11 billion events in Hall C during FY 2005. Achieving this target allows scientists to study the structure of the nucleon and light nuclei. These accomplishments allow precise measurements of fundamental properties of the proton, neutron and simple nuclei for comparison with theoretical calculations to provide a quantitative understanding of the quark sub-structure.

Documentation: Official correspondence from Thomas Jefferson National Accelerator Facility management to NP Office reporting and certifying accuracy of recorded number of events in Hall A, B, C at CEBAF.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Nuclear Physics (con't)

G **Sample at least 1300 million heavy-ion collision events by the PHENIX detector, and record at least 28 million heavy-ion collision events by the STAR detector at the Relativistic Heavy Ion Collider (RHIC). (SC GG 5.20.03)**

Commentary: Sampled 8600 million events in PHENIX and STAR recorded 116.8 million events during FY 2005. Achieving this target allows scientists to study heavy-ion collision events that create new forms of hot, dense nuclear matter and to probe their properties. These higher recording rates help the nation maintain its world-class position in this field of study.

Documentation: Official correspondence from Brookhaven National Laboratory management to NP Office reporting and certifying accuracy of recorded number of events by PHENIX and STAR at RHIC.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve 80 percent average operation time of the scientific user facilities (measured as a percentage of the total scheduled annual operating time). (SC GG 5.20.04)**

Commentary: NP user facilities achieved 87 percent reliability of uptime/scheduled time during FY 2005. By achieving this target, scientists can optimally use the facilty's capability and optimize operation time studying nuclear physics. The level of reliability is a key characteristic of a "world-class" research facility.

Documentation: Official correspondence from Argonne National Laboratory (ATLAS), Brookhaven National Laboratory (RHIC), Oak Ridge National Laboratory (HRIBF), and Thomas Jefferson National Accelerator Facility (CEBAF) management to NP Office reporting and certifying annual achieved operation time of the user facility; NP program office worksheet showing subsequent calculation and compiled average of the achieved operation time as percent of total scheduled annual operating time.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
Y	G	G	Y

Program Goal: Biological and Environmental Research (BER) Provide the biological and environmental discoveries necessary to clean and protect our environment, offer new energy alternatives, and fundamentally alter the future of medical care and human health. (SC GG 5.21)

Commentary: Manipulation of matter by BER at the micro, nano, and molecular scales fuels progress towards revealing the mechanisms and fundamental secrets of biological and environmental systems. This progress will allow modeling and prediction of biological and environmental interactions on a regional and global basis.

FY 2005 Annual Targets

G **Conduct two sets of field experiments to evaluate biological reduction of chromium and uranium by microorganisms and compare the results to laboratory studies to understand the long term fate and transport of these elements in field settings. (SC GG 5.21.01)**

Commentary: Determined the scalability of laboratory results through field experiments to evaluate biological reduction of chromium and uranium. Stimulated microbial reduction of uranium and chromium at field scale mirrors processes observed at the lab scale by substantially lowering soluble concentrations of these contaminants. Achieving this target allows evaluation of the long-term fate and transport of biologically reduced chromium and uranium by native microorganisms for subsequent use in bioremediation.

Documentation: Emails reporting the results and publication/availability of the results. The e-mails may be found at http://www.lbl.gov/NABIR/generalinfo/

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Sequence at least 28 billion base pairs of high quality (less than one error in 10,000 bases) DNA microbial and model organism genomes. (SC GG 5.21.02)**

Commentary: Determined 33.61 billion base pairs of high quality DNA sequence during FY 2005. Achieving this target increases our body of knowledge to enable high-quality sequencing of DNA.

Documentation: Emails reporting the results and data availability. The e-mails may be found at http://www.jgi.doe.gov/sequencing/statistics.html

Related Prior Year Target Performance: FY 2004: G FY 2003: G FY 2002: R

Program Goal: Biological and Environmental Research (con't)

G **Implement three separate component submodels (an interactive carbon cycle submodel, a secondary sulfur aerosol submodel, and an interactive terrestrial biosphere submodel) within a climate model and conduct 3-4 year duration climate simulation using the fully coupled model. (SC GG 5.21.03)**

Commentary: The program implemented a five year simulation of the complete coupled model, including a carbon cycle submodel, a secondary sulfur aerosol submodel, and an interactive terrestrial biosphere submodel. Achieving this target permits the implementation of climate models and moves the program closer to climate simulations that will help determine energy policy relative to global climate change.

Documentation: Emails reporting the results and publication/availability of the results. The e-mails may be found at http://asd.llnl.gov/asc/

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **Y**

G **Achieve greater than 90 percent average operation time of the (climate change) scientific user facilities (measured as a percentage of the total scheduled annual operating time). (SC GG 5.21.04)**

Commentary: BER scientific user facilities operated on schedule to achieve the FY 2005 target. Achieving this target ensures that the scientific user facilities achieve operating times consistent with the full use of the resources.

Documentation: Emails reporting the results and data availability. For ARM Climate Research Facilities, e-mails may be found at: http://www.arm.gov/acrf/opsstats.stm For Free Air Carbon Dioxide Enrichment (FACE) Facilities, e-mails may be found at: http://www.unlv.edu/Climate_Change_Research/NDFF/performance.htm (Nevada Test Site); http://www.esd.ornl.gov/facilities/ORNL-FACE/userfacility.html (Oak Ridge National Laboratory) http://face.env.duke.edu/performance.cfm (Duke); and http://aspenface.mtu.edu/performance.htm (Rhinelander, Wisconsin).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve greater than 90 percent average operation time of the (environment) scientific user facilities (measured as a percentage of the total scheduled annual operating time.) (SC GG 5.21.05)**

Commentary: The Environmental Molecular Sciences Laboratory (EMSL) operated for a total of 4355 hours (99.7 percent of available hours) during FY 2005. Achieving this target ensures that the scientific user facilities achieve operating times consistent with the full use of the resources.

Documentation: Emails reporting the results and data availability. The e-mails may be found at: http://www.emsl.pnl.gov/homes/hours.shtml (EMSL).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

Program Goal: Biological and Environmental Research (con't)

G **Achieve greater than 90 percent average operation time of the (life sciences) scientific user facilities (measured as a percentage of the total scheduled annual operating time). (SC GG 5.21.06)**

Commentary: During FY 2005, the Center for Comparative and Functional Genomics operated 3,536 hours, which is 100 percent of the goal for FY 2005. Achieving this target ensures that the scientific user facilities achieve operating times consistent with the full use of the resources.

Documentation: Emails reporting the results and data availability. The e-mails may be found at: http://www.ornl.gov/sci/mgrf/facilities.shtml (Center for Comparative and Functional Genomics); and http://www.jgi.doe.gov/sequencing/statistics.html (Production Genomics Facility).

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

R **Complete fabrication of 60 microelectrode array for use as an artificial retina and insert prototype device into blind patient. (SC GG 5.21.07)**

Commentary: The fabrication of the 60 microelectrode array to be used as an artificial retina has been completed. However, Federal Drug Administration (FDA) approval to implant the prototype device into blind patients was not achieved as initially planned.

Action Plan: Discussions have been held with the FDA, and approval to insert 60 microelectrode arrays into patients is expected in the second quarter of FY 2006. Achieving this target will allow scientists to replicate human function and advance blind patient sight, spurring R&D for other prostheses/organs.

Documentation: Emails reporting results, publication, and availability of the results may be found at http://www.doemedicalsciences.org/abt/retina/retinas.shtml

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

FY 05	FY 04	FY 03	FY 02
G	G	G	G

Program Goal: Basic Energy Sciences (BES) Provide the scientific knowledge and tools to achieve energy independence, securing U.S. leadership and essential breakthroughs in basic energy sciences. (SC GG 5.22)

Commentary: Progress continues to be made towards understanding the behavior of large assemblies of interacting components and observing and manipulating matter at the molecular scale.

FY 2005 Annual Targets

G **Demonstrate an X-ray pulse of less than 100 femtoseconds in duration and containing more than 100 million photons per pulse. (SC GG 5.22.01)**

Commentary: 70 femtosecond pulses with 100 million photons per pulse were measured during FY 2005. Achieving this target improves how well scientists can "see" fast events, such as chemical reactions and the folding of proteins.

Documentation: Report(s) from the research performer(s) with references to the source documentation that contains the final results for this Annual Target reside in the files of the Office of Basic Energy Sciences, within the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Demonstrate first measurement of spatial resolutions for imaging in the hard and soft x-ray Regions (less than 100 and 18 nanometers, respectively), and spatial information limit for an electron microscope (less than 0.08 nanometers). (SC GG 5.22.02)**

Commentary: The following was achieved during FY 2005: Hard x-ray - 90 nanometers, Soft x-ray - 15 nanometers, Electron microscope - 0.078 nanometers. Achieving this target improves the clarity with which scientists can "see" very small objects such as viruses or even atoms, which have a size on the scale of nanometers.

Documentation: Report(s) from the research performer(s) with references to the source documentation that contains the final results for this Annual Target reside in the files of the Office of Basic Energy Sciences, within the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

Program Goal: Basic Energy Sciences (con't)

G **Achieve greater than 10 reacting species and greater than 0.2 billion grid points in a three-dimensional combustion reacting flow computer simulation, as a part of the Scientific Discovery through Advanced Computing (SciDAC). (SC GG 5.22.03)**

Commentary: Eleven reacting species and 0.5 billion grid points were achieved during FY 2005. Achieving this target allows scientists to improve our ability to simulate real-world conditions for combustion. Understanding combustion and the ability to accurately conduct simulations is essential to developing more efficient and catalysis technologies.

Documentation: Report(s) from the research performer(s) with references to the source documentation that contain the final results for this Annual Target reside in the files of the Office of Basic Energy Sciences, within the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **NA** FY 2002: **NA**

G **Achieve less than 10 percent cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. (SC GG 5.22.04)**

Commentary: During FY 2005, a +0.1 percent cost variance and a -1.2 percent schedule variance was achieved. Achieving this target improves our scientific efficiency and capability in major construction, upgrades, or equipment procurement. Controlling construction costs and meeting project schedules enables state-of-the-art research facilities to be available in time to maintain our world-leader status.

Documentation: Supporting documents reside in the Department's Office of Engineering and Construction Management's Project Assessment and Reporting System (PARS), and with Basic Energy Science's Division of Scientific User Facilities, within the Office of Science.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

G **Achieve greater than 90 percent average operation time of the scientific user facilities (measured as a percentage of the total scheduled annual operating time). (SC GG 5.22.05)**

Commentary: During FY 2005, 97.7 percent average annual operating time at BES facilities as a percentage of planned scheduled time was achieved (i.e., 29,108 actual total hours delivered to users versus 29,800 total planned hours). Achieving this target ensures full use of the seven scientific user facilities and justifies investments in crucial, yet expensive, user facilities.

Documentation: Supporting documents consist of the required annual reports submitted to BES by all BES user facilities at the completion of each fiscal year. These final reports reside in the files of the Office of Basic Energy Sciences, within the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	Y	Y	G

Program Goal: Advanced Scientific Computing Research (ASCR) Deliver forefront computational and networking capabilities to scientists nationwide that enable them to extend the frontiers of science, answering critical questions that range from the function of living cells to the power of fusion energy. (SC GG 5.23)

Commentary: Progress continues to be made towards propelling scientific computing to the forefront of discovery. Scientific computing joins theory and experiment to enable researchers to make scientific progress.

FY 2005 Annual Targets

G **Achieve less than 10 percent within original baseline cost for completed procurements of major computer systems or network services, and achieve 10 percent within original performance baseline versus integrated performance over the life of the contracts. (SC GG 5.23.01)**

Commentary: National Energy Research Scientific Computing Center (NERSC) New Computational System (NCS) procurement was completed within 10 percent of baselines. Common Access Interface (CCS/LCC) procurement was completed on schedule per Baseline established. Achieving this target will ensure computer and network procurement and contract effectiveness, thus delivering state-of-the-art computing quickly to the scientist.

Documentation: Official correspondence from Lawrence Berkeley National Laboratory and Oak Ridge National Laboratory management to ASCR certifying progress against original baseline cost and performance profiles of: NERSC NCS procurement and ORNL CCS LCC procurement.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

G **Focus usage of the primary supercomputer at the National Energy Research Scientific Computing Center (NERSC) on capability computing. Achieve 40 percent of computing time used that is accounted for by computations that require at least one-eighth of the total resource. (SC GG 5.23.02)**

Commentary: During FY 2005, 67.5 percent of the computing time of NERSC was for jobs that required at least 512 processors (one-eighth of the total resource). Achieving this target will increase usage of the primary supercomputer for capability computing, and increase large-scale computations for Office of Science missions.

Documentation: Usage data is available at: https://athena.nersc.gov/SPdocs/ (userid and password required, to be provided upon request).

Related Prior Year Target Performance: FY 2004: R FY 2003: NA FY 2002: NA

Program Goal: Advanced Scientific Computing Research (ASCR) (con't)

G

Achieve greater than 50 percent average increase in the computational effectiveness (either by simulating the same problem in less time or simulating a larger problem in the same time) of a subset of application codes within the Scientific Discovery through Advanced Computing (SciDAC) effort. (SC GG 5.23.03)

Commentary: Five SciDAC applications were benchmarked to determine initial performance and current capability. Measured increases in code application effectiveness ranged from 54 percent to 81 percent with an average increase of approximately 65 percent. In two code applications significant new science was incorporated into the application codes with no increease in (computer) execution time. Achieving this target maximizes computational effectiveness in crucial areas, applying computational capabilities to other scientific endeavors within the Department and the SciDAC program.

Documentation: Results are documented in the October 6, 2005 report entitled, "Application Software Case Studies in FY 2005 for the Mathematical, Information and Computational Sciences Office of the U.S.," available from the Department's Office of Science.

Related Prior Year Target Performance: FY 2004: G FY 2003: NA FY 2002: NA

FY 05	FY 04	FY 03	FY 02
G	G	Y	G

Program Goal: Fusion Energy Research (FES) Answer the key scientific questions and overcome enormous technical challenges to harness the power that fuels a star, realizing by the middle of this century a landmark scientific achievement by bringing "fusion power to the grid." (SC GG 5.24)

Commentary: Progress in FES makes possible a science-based energy source that fuels a star and also powers our industries and homes. This momentous scientific achievement will be fusion energy.

FY 2005 Annual Targets

G

Measure plasma behavior in Alcator C-Mod with high-Z antenna guards and input power > 3.5 MW, contributing toward the predictive capability for burning plasmas and configuration optimization. (SC GG 5.24.01)

Commentary: During FY 2005, the program measured plasma behavior in Alcator C-Mod with high-Z antenna guards and input power > 3.5 MW. The improvements found in using all-metal walls over boron-nitride tiles were highly encouraging, and provide important data for a critical component of the ITER project. Scientists are now obtaining data on plasma behavior needed to eventually predict the performance of burning plasmas in ITER and beyond, thereby advancing the President's commitment to make ITER a success and to make science a national priority.

Documentation: http://www.ofes.fusion.doe.gov/ProgramTargets/ProgramTargets.htm

Related Prior Year Target Performance: FY 2004: NA FY 2003: NA FY 2002: NA

Program Goal: Fusion Energy Research (con't)

G **Simulate nonlinear plasma edge phenomena using extended magnetohydrodynamic (MHD) codes with a resolution equal to 20 torioidal modes. (SC GG 5.24.02)**

Commentary: During FY 2005, the program simulated nonlinear plasma edge phenomena using extended magnetohydrodynamic (MHD) codes with a resolution equal to 20 torioidal modes. This work has enabled new insights into the global dynamics of edge localized modes (ELMs) in tokamaks, and their interaction with plasma facing components. Achieving this target allows scientists to simulate nonlinear plasma edge phenomena for optimizing confinement and predicting the behavior of burning plasmas in ITER, thereby advancing the President's commitment to make science a national priority.

Documentation: http://www.ofes.fusion.doe.gov/ProgramTargets/ProgramTargets.htm

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Achieve greater than 90 percent average operation time of the major national fusion facilities (DIII-D, Alcator C-Mod, NSTX) measured as a percentage of the total planned operation time. (SC GG 5.24.03)**

Commentary: During FY 2005, all FES scientific user facilities operated on schedule, completing a total of 52 run weeks, exceeding the planned operation time (48 weeks) and the annual target (43 weeks). Achieving this target optimizes the use and operation times in three major national fusion facilities, thereby enabling timely completion of fusion related experiments designed to answer key plasma confinement questions.

Documentation: http://www.ofes.fusion.doe.gov/ProgramTargets/ProgramTargets.htm

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **R** FY 2002: **G**

G **Achieve less than 10 percent cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. (SC GG 5.24.04)**

Commentary: The program achieved less than 10 percent cost-weighted mean percent variance from established cost and schedule baselines for major construction, upgrade, or equipment procurement projects. Achieving this target improves our scientific efficiency and capability in major construction, upgrades, or equipment procurement, thereby advancing the President's commitment to make science a national priority.

Documentation: http://www.ofes.fusion.doe.gov/ProgramTargets/ProgramTargets.htm

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

General Goal 6: Environmental Management

General Goal 6: Environmental Management

Accelerate cleanup of nuclear weapons manufacturing and testing sites, completing cleanup of 108 contaminated sites by 2025.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
5	2	2	0

FY 2005 Program Costs ($ in Millions): $6,719

FY 05	FY 04	FY 03	FY 02
Y	R	Y	Y

Program Goal: Environmental Management Based on EM's accelerated risk reduction and site closure initiative, EM is targeting 89 and 100 geographic sites to be completed by the end of FY 2006 and FY 2012, respectively. (EM GG 6.18)

Commentary: EM's FY 2005 achievements include completing the packaging of all remaining plutonium metals, exceeding targets for packaging enriched uranium and high level waste for secure storage until disposition in a geologic repository, and exceeding targets for completing remediation work at nuclear facilities and release sites. These achievements demonstrate the focus of the EM program to deliver significant reduction in environmental, safety, and security risks. While EM was not successful in completing remediation at Amchitka Island in Alaska and the Laboratory for Energy-Related Health Research in California, or in meeting the targets for disposal of transuranic waste, closing liquid waste tanks, packaging plutonium and uranium residues for disposition, or completing remediation work at radioactive facilities, the EM program did ensure that its cleanup efforts across the Department's complex continue to be safe for workers and protective of the environment. EM is evaluating its schedule priorities for completing remediation work across the complex and will provide a schedule in the FY 2007 budget submittal to Congress.

FY 2005 Annual Targets

R **Dispose at the Waste Isolation Pilot Plant (WIPP) a cumulative total of 40,711 m3 of transuranic (TRU) waste. (EM GG 6.18.01)**

Commentary: Due to waste characterization delays at Idaho and Los Alamos National Laboratories, EM is currently behind its lifecycle schedule, having disposed of only 6,733 cubic meters in FY 2005 for a cumulative total of 27,875 cubic meters of TRU waste. However, EM achieved a major environmental accomplishment at the Rocky Flats site disposing of the last TRU waste from the site in the third quarter of FY 2005, demonstrating definite, measurable progress by EM in reducing risk and completing cleanup.

Plan of Action: EM has improved waste characterization procedures and has resumed sustained shipments of TRU waste from Los Alamos National Laboratory and Idaho National Laboratory. EM is evaluating its schedule priorities for disposing TRU waste from across the complex and will provide a schedule based on reestablished priorities in the FY 2007 budget submittal to Congress.

Documentation: Shipping manifests on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **G** FY 2002: **G**

Program Goal: Environmental Management (con't)

R **Close a cumulative total of 20 liquid waste tanks. (EM GG 6.18.02)**

Commentary: Treatment of liquid waste in tanks, and thereby closure of those tanks, at Hanford, Idaho, and Savannah River Site has been limited due to the Waste Incidental to Reprocessing (WIR) lawsuit decision in July 2003, resulting in no tanks closed in FY 2005 for a cumulative total of 2 tanks closed overall. Not accomplishing this measure as scheduled could result in the Department not meeting its goals for accelerated cleanup at these sites.

Plan of Action: Congress has provided legislative authority for DOE to make waste classification decisions at Savannah River Site and Idaho, allowing the treatment and disposal of liquid waste, and the eventual closure of tanks. The Savannah River Site has developed its first waste determination under the new legislation and has submitted it to the United States Nuclear Regulatory Commission for review and comment. EM is evaluating its schedule priorities for closing liquid waste tanks across the complex and will provide a schedule based on reestablished priorities in the FY 2007 budget submittal to Congress.

Documentation: Written documentation from State and Federal Regulators documenting approval of closed/emptied tanks, on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **R** FY 2002: **NA**

G **Package for disposition a cumulative total of 2,227 containers of high level waste. (EM GG 6.18.03)**

Commentary: The Defense Waste Processing Facility at the Savannah River Site continues to perform well by packaging for disposition 257 containers in FY 2005 for a cumulative total of 2,244 containers of high level waste. Completing this activity ahead of schedule results in a significant reduction in environmental, safety, and security risks.

Documentation: Quality Assurance Inspection records for waste packaging on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **Y** FY 2002: **Y**

G **Package for disposition a cumulative total of 3,648 enriched uranium containers. (EM GG 6.18.04)**

Commentary: Schedule accelerations at Idaho, Hanford, and Savannah River have resulted in the Department packaging 2,313 containers in FY 2005 for a cumulative total of 5,541 enriched uranium containers. By exceeding its target for this activity ahead of schedule, EM has significantly reduced environmental, safety, and security risks.

Documentation: Shipping manifests and disposal records on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **R** FY 2002: **NA**

Program Goal: Environmental Management (con't)

Y **Package for disposition a cumulative total of 107,989 kg of bulk plutonium and uranium residues. (EM GG 6.18.05)**

Commentary: Due to difficulties in processing materials at the Savannah River Site, EM was able to only package for disposition 51 kg in FY 2005 for a cumulative total of 107,790 kilograms of bulk plutonium and uranium residues. Failing to accomplish this measure on schedule could result in the Department not meeting its goals for accelerated site closure.

Plan of Action: Savannah River has been able to resolve its processing problems. EM is evaluating its schedule priorities for packaging bulk plutonium and uranium residues across the complex and will provide a schedule based on reestablished priorities in the FY 2007 budget submittal to Congress.

Documentation: Facility Inventory Process Ledgers on file at Savannah River Site.

Related Prior Year Target Performance: FY 2004: **R** FY 2003: **G** FY 2002: **G**

G **Complete remediation work at a cumulative total of 42 nuclear facilities. (EM GG 6.18.06)**

Commentary: Work is proceeding ahead of schedule at Idaho, Rocky Flats, and Ohio, resulting in completion of remediation at 25 nuclear facilities in FY 2005 for a cumulative total of 59 nuclear facilities overall. This demonstrates the ability of the EM program to deliver significant reduction in environmental, safety, and security risks.

Documentation: Facility Decommissioning Project Final Report or State and Federal regulator acceptance of facility completion report. Both on-file at applicable sites.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **G** FY 2002: **NA**

Y **Complete remediation work at a cumulative total of 257 radioactive facilities. (EM GG 6.18.07)**

Commentary: In FY 2005, 45 radioactive facilities were completed for a cumulative total of 238 radioactive facilities overall; 19 facilities short of meeting EM's target. Failing to accomplish this measure on schedule could result in the Department not meeting its goals for accelerated site closure.

Plan of Action: EM is evaluating its schedule priorities for completing radioactive facilities across the complex and will provide a schedule based on reestablished priorities in the FY 2007 budget submittal to Congress.

Documentation: Facility Decommissioning Project Final Report or State and Federal regulator acceptance of facility completion report. Both on-file at applicable sites.

Related Prior Year Target Performance: FY 2004: **Y** FY 2003: **G** FY 2002: **NA**

Program Goal: Environmental Management (con't)

G **Complete remediation work at a cumulative total of 5,669 release sites. (EM GG 6.18.08)**

Commentary: Work is proceeding ahead of schedule at Rocky Flats, Lawrence Livermore, Pantex, and Nevada resulting in completion of remediation work at 369 release sites in FY 2005 for a cumulative total of 5,858 release sites overall. Completing this activity ahead of schedule results in a significant reduction in environmental, safety, and security risks.

Documentation: State and Federal regulator acceptance of Remedial Action Report on file at applicable sites.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **G** FY 2002: **G**

FY 05	FY 04	FY 03	FY 02
G	G	NA	NA

Program Goal: Legacy Management Ensure that the Department's long-term agreements and legal commitments to environmental stewardship and to former contractor employees are satisfied. (LM GG 6.26)

Commentary: By managing the long-term surveillance and maintenance at sites where remediation has been completed, the Departmental is better able to concentrate efforts on continuing to accelerate cleanup and site closure resulting in reduced risks to human health and the environment and reduced landlord costs.

FY 2005 Annual Targets

G **Ensure continued effectiveness of cleanup remedies through surveillance and maintenance activities at 67 sites, including Pinellas and Maxey Flats, in accordance with legal agreements. (LM GG 6.26.01)**

Commentary: By completing the target number of inspections, the Office of Legacy Management is able to demonstrate that cleanup remedies remain effective in reducing risks to human health and the environment to safe levels. This directly supports the program goal of managing land, structures, and facilities in accordance with legal and regulatory commitments of the Department.

Documentation: Documentation of inspections is of file at the Department's Grand Junction Office.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

General Goal 7: Nuclear Waste

General Goal 7: Nuclear Waste

License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste.

FY 2005 Annual Performance Targets

Green *(100%)*	Yellow *(=80%, <100%)*	Red *(<80%)*	Undetermined
3	0	1	0

FY 2005 Program Costs ($ in Millions): $521

FY 05	FY 04	FY 03	FY 02
R	G	R	G

Program Goal: Nuclear Waste Disposal License and construct a permanent repository for nuclear waste at Yucca Mountain and begin acceptance of waste. (RW GG 7.25)

Commentary: The Department of Energy's Office of Civilian Radioactive Waste Management (OCRWM) made progress in FY 2005 in beginning to develop a transportation system for an operating permanent nuclear waste repository. However, due to some technical issues, but primarily legal and regulatory issues involving establishment of a radiation standard and the Licensing Support Network, the Department is behind schedule (which it is currently reassessing) in the process to obtain a license to construct a permanent repository for nuclear waste.

FY 2005 Annual Targets

R **Complete draft License Application documents incorporating improvements in safety analysis and design. (RW GG 7.25.01)**

Commentary: OCRWM decided that the draft license application should not be submitted until issues including fuel oxidation, the Environmental Protection Agency's (EPA) radiation standard, and the infiltration model have been resolved. While this decision resulted in the Department not meeting the target as scheduled, resolution of the issues will enable the Department to submit a defensible license application to construct and operate a permanent repository for nuclear waste.

Plan of Action: The fuel oxidation issue will be addressed through a revision to the design of the surface facilities while the infiltration model estimates will be addressed through replacement or revalidation of U.S. Geological Survey models, documents, and data. The issue of EPA's radiation standard is dependent on the issuance of a final rule by EPA and the Nuclear Regulatory Commission's incorporation of that standard into 10 CFR 63. While work has been initiated to demonstrate compliance with the draft rule, adjustments to the Department's approach may be required if the proposed standard changes upon final issuance. Schedules to accomplish this work are in development.

Documentation: Letter from contractor transmitting the draft License Application.

Related Prior Year Target Performance: FY 2004: **G** FY 2003: **Y** FY 2002: **G**

Program Goal: Nuclear Waste Disposal (con't)

G **Complete processing of documents and e-mails (dated January 1, 2005 or earlier) to be ready for the Licensing Support Network (LSN). (RW GG 7.25.02)**

Commentary: In response to a motion from the State of Nevada, the Nuclear Regulatory Commission's Pre-Application Presiding Officer Board ordered DOE to produce the draft license applications on the LSN. Therefore, while all documents and e-mails dated January 1, 2005, or earlier have been processed to DOE's website, the submission of DOE's LSN certification is on hold pending a ruling on DOE and NRC appeals to this order and on completion of internal verifications to ensure all requirements have been met. Submission of the LSN is a critical component of the process to obtain a license to construct and operate a permanent nuclear waste repository.

Documentation: Transmittal of documents and e-mails to the Department's website.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Submit the preliminary draft Environmental Impact Statement (EIS), prepared by the EIS contractor, for DOE internal review. (RW GG 7.25.03)**

Commentary: The Department began internal review of the preliminary draft Nevada Rail Line Environmental Impact Statement (EIS) subsequent to receiving it on August 5, 2005. This EIS is a necessary step in the development of a transportation system for operating the permanent nuclear waste repository.

Documentation: Letter from the EIS contractor to the Department submitting the preliminary Draft Rail Alignment EIS.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

G **Reduce project management costs for the OCRWM management and operating contractor one percent annually from an FY 2003 level of 17 percent to a level of 15 percent in FY 2005; project management costs will not exceed 14 percent of the total costs by FY 2006. (RW GG 7.25.04)**

Commentary: Reducing overhead costs to 10 percent in FY 2005 helps OCRWM minimize overall project costs. These savings then become available for other OCRWM projects needed to reach the program goal. While OCRWM met the target, improvements to the management and operating contractor's cost and performance reporting systems and procedures are needed to ensure accuracy of data reported. It is important to be able to have accurate cost and schedule data so that management can better track progress of the project to construct the permanent waste repository.

Documentation: Monthly Cost and Performance Report for September 2005.

Related Prior Year Target Performance: FY 2004: **NA** FY 2003: **NA** FY 2002: **NA**

Status of Unmet FY 2004 Performance Targets

Goal 1: Nuclear Weapons Stewardship

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
DP 1.27.3	Complete 95% of all PCD-scheduled activity. Finish 100% of all prior year non-completed scheduled evaluations.	84	NA 1.27

Status: MET. Seven Disassembly and Inspections (D&I) in unmet portion of target were rolled into a FY 2005 target as "prior year" and completed in FY 2005. The four W84 D&Is were not included in the FY 2005 schedule and cannot be separately tracked.

DP 1.27.5	Complete 75% of W76-1 Phase 6.3 (FY03 - 50%). Complete 10% of Phase 6.4 (FY03 - 0%).	85	NA 1.27

Status: MET. The Design Review and Acceptance Group met in the first quarter of FY 2005 and DoD provided design concurrence. The Full Scale Engineering Development schedule was approved in the first quarter of FY 2005. The unmet portion of the FY 2004 target (6%) was completed in FY 2005.

DP 1.27.6	Complete 70% of W80-3 Phase 6.3 (FY03 - 55%). Complete 10% of W80-3 Phase 6.4 (FY03 - 0%).	85	NA 1.27

Status: MET. Completed actions necessary for Phase 6.4 authorization, which was received in April 2005. Met target portions of Phase 6.4 activity in FY 2005.

DP 1.28.2	Complete 100% of the external technical review of required work on the Dual-Axis Radiographic Hydrotest (DARHT) facility and plans for completion of DARHT Second Axis.	88	NA 1.28

Status: MET. Unmet portion of target (DARHT External Review) was completed in the second quarter of FY 2005.

DP 1.28.4	Execute the planned hydrodynamic experiments on DARHT and Container Firing Facility (CFF)/Flash X-Ray (FXR) at Los Alamos and Lawrence Livermore National Laboratories.	89	NA 1.28

Status: MET. A corrective action plan was developed and approved. Unmet portion of FY 2004 target (3 shots) was completed in FY 2005.

DP 1.30.1	Complete 63% of progress towards creating and measuring extreme temperature and pressure conditions for the FY2010 nuclear stockpile stewardship requirements.	93	NA 1.30

Status: MET. Schedule was defined and approved. The unmet portion of target (1 milestone) was completed in the fourth quarter of FY 2005.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
DP 1.30.2	Complete 63% of progress towards demonstrating ignition (simulating fusion condition in a nuclear explosion) at the National Ignition Facility (NIF) to increase confidence in modeling weapons performance.	94	NA 1.30

Status: MET. Schedule was defined and approved. The unmet portion of FY 2004 target (1 milestone) was completed in the third quarter of FY 2005.

DP 1.30.4	Complete 16% (cumulative) of equipment fabricated to support ignition experiments at NIF.	94	NA 1.30

Status: MET. Revised schedule was implemented. The unmet portion of FY 2004 target (1 milestone - 4%) was completed in the second quarter of FY 2005.

DP 1.31.3	Achieve 40 TeraOPS (with 10 TeraBytes memory and 240 TeraBytes storage).	97	NA 1.31

Status: MET. The unmet portion of FY 2004 target (delivery and operation of Red Storm platform with 40 TeraOPS capability) was completed in the second quarter of FY 2005.

DP 1.31.5	Achieve an average cost of $8.15M/TeraOPS.	98	NA 1.31

Status: MET. With delivery of Red Storm platform, this target was achieved in the second quarter of FY 2005 ($8.15M/TeraOPS).

DP 1.32.1	Manufacture 6 (for total of 8) W88 pits.	99	NA 1.32

Status: MET. Rebaselining changed the target to the manufacture of 4 pits, of which 3 were completed in FY 2004. The actual unmet portion of FY 2004 target (1 pit) was completed in FY 2005.

DP 1.32.3	Complete 25% of major milestones, documented in the Pit Manufacturing and Certification Program Plan, completed on/ahead of schedule toward W88 pit certification.	100	NA 1.32

Status: MET. Schedule for revised project baseline was defined and approved. The unmet portion of FY 2004 target (5%) was completed in FY 2005.

DP 1.32.4	Complete 20% of the major milestones required for Critical Decision (CD)-1 approval.	101	NA 1.32

Status: MET. The unmet portion of FY04 target (3% of the major milestones) was completed in the first quarter of FY 2005.

DP 1.33.2	Complete 5 of 27 major manufacturing process milestones.	102	NA 1.33

Status: MET. The Integrated Pit Inspection System was successfully deployed in September 2005.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
DP 1.34.2	Reportable accidents are below National Bureau of Labor (BLS) standards of 6.4.	105	NA 1.34

Status: MET. The fourth quarter FY 2004 accident rate, obtained in November 2004, indicated a reportable accident rate of 1.9 per 200,000 work-hours, well below the BLS rate of 6.4.

DP 1.35.1	Initiate design (CD-1) on, or cancel for cause, 11 projects	106	NA 1.35

Status: MET. The Capability for Advanced Loading Missions Project at the Savannah River Site (SRS) was cancelled for cause in FY 2005; the Chemistry and Metallurgy Research Replacement Facility Project at Los Alamos National Laboratory (LANL) attained CD-1 in April 2005; and the Beryllium Capability Project at Y-12 attained CD-1 in June 2005.

DP 1.35.2	Initiate construction (CD-3) on, or cancel for cause, 8 projects.	107	NA 1.35

Status: MET. The eighth project was moved into the FY 2005 target and is being reported there.

DP 1.36.3	Produce 3 Safeguards Transporters (SGTs) for a total of 32 trailers.	109	NA 1.36

Status: MET. The target of 32 was an error; production of 3 SGTs was accomplished. The FY 2005 target includes SGTs 32 & 33.

DP 1.37.2	30% of identified Radiological Assistance Program (RAP) team members (80 of 216) qualified to provide technical assistance in managing and executing the response to a radiological or nuclear event.	111	NA 1.37

Status: MET. The missed FY 2004 target was included in the FY 2005 target and was completed during the first quarter of FY 2005.

DP 1.39.1	Reduce 30% of Protective Force staff unscheduled overtime.	115	NA 1.39

Status: UNMET/CLOSED. This was a point-in-time measure. We have identified lessons learned for future application. Additionally, the original measure was not acceptable to OMB during the PART review. This is not an effective high-level measure and was removed as a FY 2005 measure.

DP 1.39.2	Increase 80% of each of six physical security topical area reviews at the NNSA sites.	116	NA 1.39

Status: UNMET/CLOSED. In accordance with the action plan, DOE's Office of Independent Oversight and Performance Assurance (OA) reviews of Y-12 and Nevada did occur as planned in June 2005 and September 2005, respectively. However, increased Departmental security requirements described in the new Design Basis Threat (DBT) have required the program to rebaseline this measure. Current targets are 65% in FY 2005 (MET), 70% in FY 2006, 75% in FY 2007, 80% in FY 2008, 85% in FY 2009, and 90% in FY 2010.

Goal 2: Nuclear Non-Proliferation

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
NN 2.40.8	40 % of all active R&D projects for which an independent R&D merit assessment has been completed within the last 3 years to determine the scientific quality and continued user and mission relevance.	124	NA 2.40

Status: UNMET/CLOSED. Because this is an annual point-in-time target, it could not be met in the subsequent year. However, lessons learned were identified for future years. Additionally, this performance measure has been revised to be more reflective of the entire program and not just one sub-program area.

NN 2.42.1	Complete 16 % of progress towards constructing a fossil plant in Seversk facilitating shut down of two weapons-grade plutonium production reactors.	127	NA 2.42

Status: MET. The missed FY 2004 target was included in the FY 2005 target of a cumulative 32% and has since been completed in FY 2005. In addition, the FY 2005 target reflects the corrected calculation formula based on the revised Seversk Total Project Cost (TPC). The approval of Critical Decision (CD) - 2/3 in November 2004 approved a $387.3 million baseline TPC that is used in the calculation.

NN 2.42.3	Complete 14% of safety upgrades to the three operating Russian plutonium production reactors.	128	NA 2.42

Status: CLOSED.

NN 2.44.1	Convert 42% of 98 targeted research and test reactor cores converted from high enriched uranium to low enriched uranium.	129	NA 2.44

Status: MET. The FY 2004 target is a cumulative total of 41 reactors converted; this was met in the fourth quarter of FY 2005.

NN 2.44.5	Purchase and deliver 177 kilograms of high enriched uranium.	131	NA 2.44

Status: UNMET/CLOSED. Because price and liability issues could not be resolved the project was cancelled in early 2005. The $20.5M of unused funds was recalled to Headquarters for a re-programming request for the Elimination of Weapons Grade Plutonium Production (EWGPP) program that went to Congress for approval in FY 2005.

NN 2.46.4	Convert 24% of 27 MTs of HEU converted to LEU.	136	NA 2.46

Status: MET/CLOSED. The FY 2004 target of 24% of 27 MTs converted is a cumulative 6.5 MTs converted. The missed target from FY 2004 was included in the FY 2005 target of a cumulative 7.5 MTs converted and was completed during FY 2005.

NN 2.46.6	Install equipment at 74 Second Line Defense (SLD) sites.	137	NA 2.46

Status: MET. Missed target from FY 2004 was included the FY 2005 target of 98 SLD sites and was completed during FY 2005.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
NN 2.46.7	Complete upgrades on 100% of the buildings scheduled for FY 2004.	138	NA 2.46

Status: MET. The two remaining buildings originally scheduled for completion in FY 2004 were completed during the first quarter of FY 2005.

NN 2.47.1	Complete 85% of the detailed design and construction of Pit Disassembly and Conversion Facility (PDCF).	139	NA 2.47

Status: MET. The FY 2004 target of 85% of the PDCF design completed was met in the second quarter of FY 2005.

NN 2.47.3	Complete 100% of the detailed design and construction of MOX Fuel Fabrication Facility.	139	NA 2.47

Status: MET. The FY 2004 target of 100% of MOX design completed was met in the second quarter of FY 2005.

NN 2.47.6	Complete 60% of the Russianization of the MOX Fuel Facility design.	141	NA 2.47

Status: UNMET/OPEN. Progress had been further delayed as a result of the liability issue. Interim arrangements with France were cancelled due to unreasonable French demands. The FY 2004 target was fully incorporated into the FY 2005 target and it is being worked by U.S. interagency teams.

General Goal 4: Energy Security

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
EE 4.01.a	Complete research for natural gas to hydrogen production and dispensing component development.	184	EE 4.01

Status: MET. R&D and engineering for natural gas to hydrogen production system components have been completed. Research for the hydrogen production system (reformer) is done and detailed engineering and safety and operability reviews are underway. The autothermal cyclic reforming system was started and is undergoing testing at UC Davis in California by General Electric. Another natural gas to hydrogen production system, steam methane reforming system, will be ready for start-up and testing by the fourth quarter of FY 2005 at Pennsylvania State University by Air Products & Chemicals Inc.

EE 4.02.3	Complete Light Truck activity with 35 percent fuel efficiency improvement over a gasoline powered light truck and Tier 2 emissions levels. Demonstrate 45 percent thermal efficiency for heavy duty diesel engines while meeting EPA 2007 emission standards (1.2 g/bhp/hr Nox).	192	EE 4.02

Status: MET. Cummins Engine Company reported at the end of 2004 that an alternative approach to cool the intake manifold demonstrated that the engine could reach 45 percent efficiency while meeting the 2007 emissions standards.

EE 4.04.7	*(For EERE's Building Technologies Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	200	EE 4.04

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.04.13.

EE 4.07.1	Create an Enhanced Geothermal System (EGS) with an industry partner and test associated technology needed to operate and monitor the system.	205	EE 4.07

Status: UNMET/OPEN. The activity to complete massive hydraulic fracturing experiment that would create a reservoir at an EGS was delayed into FY 2005. In February 2005, DOE's partner, Coso Operating Company (COC), encountered a massive lost circulation (open) zone at a depth of 8785 feet in the process of redrilling the well targeted for the stimulation experiment. The open zone renders the well useless for a stimulation experiment. **Plan of Action:** COC, U.S. Navy, and Univ. of Utah have identified another well at Coso for the stimulation experiment. With commitments of monetary and technical support from its partners, the program has decided to proceed with the experiment at the new well site and the project is expected to be completed by end of FY 2006.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
EE 4.07.2	*(For EERE's Geothermal Technologies Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	206	EE 4.07

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.07.2.

EE 4.08.c	*(For EERE's Biomass and Biorefinery Systems R&D Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	208	EE 4.08

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.08.2.

EE 4.11.3	Clean Cities will conduct 7 major workshops, award $6 million in special project funding, and report a total of 180,000 alternative fuel vehicles in operation.	215	EE 4.11

Status: CLOSED. Clean cities is now focusing on other petroleum displacement technologies, in addition to alternative fuel vehicles (AFV). Due to many of the major manufacturers pulling out of the alternative fuel vehicles market and focusing on hybrids the goal of number of AFVs in operation is more difficult. Clean Cities has initiated a strategy for increasing petroleum displacement with an expanded portfolio of transportation technologies including idle reduction, biofuels, blends and hybrids.

EE 4.11.4	Recruit 500 additional retail stores, five additional utilities and 10 additional manufacturers. Add domestic hot water heaters to the program. Begin work on a Commercial Window specification. Expand room air-conditioner program to include heating cycle. Continue outreach to non-English speaking communities and Weatherization activities.	216	EE 4.11

Status: CLOSED. The ENERGY STAR program had a change in direction in late 2004 and is no longer pursuing development of a commercial windows specification or criteria for domestic hot water heaters. Rather, the program is now taking a whole building approach. The ENERGY STAR program did meet or exceed other elements of the target in FY 2004 by recruiting 3,300 retail stores, 5 additional utilities and 10 additional manufacturers.

EE 4.11.5	This target was to decrease the program's end-of-quarter Adjusted obligated-but-uncosted balances by 10 percent on a dollar basis, relative to the same quarter a year ago.	217	EE 4.11

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.11.4.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
EE 4.11.6	Tribal Energy will conduct 6 technical and policy development workshops.	217	EE 4.11

Status: MET. The two remaining workshops (of the four planned in FY 2004) were completed in FY 2005. A workshop on financing was conducted at the Umatilla Tribes on November 16-17, 2004 and a Deal Structuring workshop was held on December 2-3, 2004 for the Fort Mojave Tribes.

EE 4.13.b	*(For EERE's Federal Energy Management Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	220	EE 4.13

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.13.2.

EE 4.13.c	Achieve between $35 and $55 million in private sector investment through Super Energy Savings Performance Contracts (ESPCs).	221	EE 4.13

Status: MET. The legal authority for implementing Super ESPCs had expired in September 2003, but was reinstated for two years starting in November 2004. This 13 month lapse caused some delays but the program was able to achieve private sector investments in FY 2005.

EE 4.59.5	*(For EERE's Distributed Energy Program)* Contribute proportionately to EERE's corporate goal of reducing corporate and program uncosteds to a range of 20-25% by reducing program annual uncosteds by 10% in 2004 relative to the program uncosted baseline (2003)	226	EE 4.59

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 4 as EE GG 4.59.12.

OE 4.12.1	Complete testing of 10 MVA superconducting transformer in operation on the Wisconsin Electric Power Company grid.	230	OE 4.12

Status: UNMET/OPEN. Dielectric studies were initiated and are on-going with national laboratory, industry and university involvement. Superior superconducting wire is becoming available that will benefit future transformer design. An International Energy Workshop on dielectrics was held that showed promising dielectric materials are being developed. **Plan of Action:** A DOE workshop on dielectrics will be held this winter to select the most promising materials and plan the necessary tests to fully qualify the materials. Small scale component testing by the transformer team will be conducted to verify that solutions to previous problems have been identified. A schedule for meeting the FY 2004 target will be developed.

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
NE 4.14.2	Award one or more contracts for the Next Generation Nuclear Plant (NGNP) pre-conceptual design.	174	NE 4.14

Status: UNMET/CLOSED. Before making a decision on whether to proceed with a full-scale demonstration of the Next Generation Nuclear Plant (NGNP), the Department will further investigate the challenges and risks of Generation IV design concepts, including waste products, from a technical and economic viewpoint. The Department will focus on fundamental R&D required to prove the viability of the GEN IV concepts. **Plan of Action:** Focus GEN-IV Program on fundamental R&D.

FE 4.55.2.1	Complete Ion Transport Membrane (ITM) designs with target oxygen production of 95% purity, to obtain engineering data for further technology scale-up, ultimately leading to cost Reductions of $75-$100/KW and efficiency improvement of 1-2 points.	155	FE 4.55

Status: MET. In the first quarter of FY 2005, APCI and its subcontractors completed the design of the subscale engineering prototype (SEP) facility and began purchase of components and parts for fabrication. In addition, it was determined that there are no long-lead items that require detail design during Phase II of the project. These accomplishments were documented via E-mail. On June 28, 2005, APCI completed construction of major equipment items for the SEP facility for testing full-size ITM modules for producing 1 to 5 TPD oxygen at 95% purity. This skid mounted unit was delivered to the test site during the fourth quarter of FY 2005.

FE 4.55.2.3	Complete at least 250 hours of high efficiency desulfurization process units operating with coal-derived synthesis gas.	157	FE 4.55

Status: UNMET/OPEN. For the High Temperature Desulfurization System and Direct Sulfur Recovery Process (HTDS/DSRP), a new location (Eastman Chemical Plant in Kingsport, TN) has been selected for testing on coal-derived syngas. Two shake-down, long-duration tests of the DSRP have been completed at the performer's lab with Eastman personnel in attendance. Full installation at Eastman Chemical's gasifier was completed during the fourth quarter of FY 2005. The Wabash plant slipstream field test of bulk sulfur removal and polishing has been rescheduled with the initial restart of the plant in June 2005. Laboratory testing of candidate sulfur sorbents is complete and the Nucon test unit has been installed at Wabash. The Conoco-Phillips S-sorb unit was installed in September 2005. Testing of the Nucon polishing unit began in late August 2005 and continued for 2-3 weeks. **Plan of Action:** In conjunction with Eastman Chemical, a detailed operations schedule and test plan have been developed. The proven, reliable operations of the Eastman gasifier, trained plant operators, and longer-duration tests enhance the probability of success of this first-of-a-kind test program. Initial testing of the HTDS/DSRP is expected to be completed during the first quarter of FY 2006. For the Wabash plant slipstream field test the DOE cooperative agreement has been novated to Conoco-Phillips from the former plant owner/operator. This will focus efforts to maintain scope and schedule for DOE's gas cleanup testing. Current plans are to conduct tests during the first quarter of FY 2005 to the next scheduled outage.

General Goal 5: World-Class Scientific Research Capacity

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
SC 5.23.2	50% of the NERSC computing time is used for by computations that require at least 1/8 of the total resource (512 processors).	268	SC 5.23

Status: CLOSED. A number of critical computationally intensive, large-scale research projects, such as global climate, could not make effective use of 512 or more processors during most of FY 2004. In June 2004, ASCR began charging for only 50% of the hours used for large scale projects as an incentive to attract researchers. This action lead to 66% of the NERSC usage during the fourth quarter of FY 2004 being for large scale projects. However, the overall result of 47% was not enough to achieve the annual target. Beginning in FY 2005, the goal for this target was changed from 50% to 40% of the computing runs using more than 512 processors. This goal was met in FY 2005.

General Goal 6: Environmental Management

Measure (PAR)	Description of Goal	FY 04 PAR (Page No.)	Crosswalk to FY 05 Program Goal
EM 6.18.2	Package 254 kilograms of bulk plutonium or uranium residues for disposition, bringing the total kilograms packaged to 107,913.	275	EM 6.18

Status: CLOSED. With completion of all scheduled lifecycle work in FY 2003, the representation in Joule of a FY 2004 first quarter milestone of 176 for Hanford was no longer accurate and stated the amount of work EM planned to do in FY 2004. EM's annual target of packaging 78 kg of bulk plutonium or uranium residues at Savannah River Site was accomplished in FY 2004.

EM 6.18.3	Close 9 liquid waste tanks, bringing the total number of tanks closed to 11.	276	EM 6.18

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 6 as EM GG 6.18.2

EM 6.18.5	Ship 12,952 cubic meters of transuranic (TRU) waste for disposition, bringing the total number of cubic meters shipped to 27,044.	277	EM 6.18

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 6 as EM GG 6.18.1

EM 6.18.7	Complete 45 radioactive facilities, bringing the total number of facilities completed to 193.	279	EM 6.18

Status: CLOSED. This metric was tracked as part of the FY 2005 annual performance measures. The current status for this metric is reported in the Performance Results Section under General Goal 6 as EM GG 6.18.7